EON Virtual Campus - KMITL University, Thailand

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Faculty of Engineering

Electrical and Computer Engineering

Digital Systems and Microprocessors in VR

Dive into the digital realm with a virtual exploration of microprocessors and systems. Grasp complex digital logic and witness the workings of microprocessors, all in immersive VR environments powered by the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Display a hero image showcasing intricate microprocessor designs and digital circuits.
- 10 floating knowledge portals elaborating:

- Fundamentals of digital systems.
- Introduction to microprocessors.
- Understanding binary logic.
- Memory and storage in microprocessors.
- Clock cycles and processing speed.
- Assembly language and programming.
- Hardware and software interfaces.
- Application of microprocessors in modern tech.
- Future trends in digital systems.
- Safety and maintenance of digital systems.

3-D Model Integration:

- Engage with detailed 3-D models of microprocessors, memory chips, and digital circuits.
- Opportunity to visualize user-uploaded digital designs in VR.

Annotations for the 3-D Model:

- Annotations highlighting components of microprocessors, digital logic gates, and memory units.
- IntelliScan identifying specific chipsets, processing units, and circuit connections.

Assessment Creation:

- Quizzes testing knowledge on digital logic, microprocessor architecture, and programming.
- Tasks prompting students to design simple digital circuits or write assembly code.

AI Generated Universal Skill Simulator:

- Interact with virtual simulations showcasing the assembly, programming, and testing of digital systems.
- AI-driven animations demonstrating the flow of information within microprocessors.

Interactive Simulation Scenarios:

- AI-identified scenarios like a chip manufacturing unit or a digital system troubleshooting session.
- Virtual simulations of circuit design and microprocessor programming tasks.

Incident Simulation:

- Engage with challenges such as system crashes, overheating of chips, or logic errors.
- Simulate diagnostics and solutions for these digital incidents.

Electrical Circuits and Systems in AR

Explore the electrifying domain of circuits and electrical systems through augmented reality. Understand the principles of electricity, engage with dynamic circuits, and troubleshoot real-world problems using the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Display a hero image capturing a complex electrical circuit board.
- 10 floating knowledge portals focusing on:
    - Basics of electrical circuits.
    - Components like resistors, capacitors, and transistors.
    - Ohm's Law and Kirchhoff's Laws.
    - Series and parallel circuits.
    - Analog and digital circuits.
    - Power distribution systems.
    - Safety protocols in electrical engineering.
    - Modern innovations in electrical systems.
    - Circuit design and layout.
    - Future of electrification.

3-D Model Integration:

- Augmented reality showcase of various electrical components, circuit designs, and electrical systems.
- Option to augment user-uploaded circuit designs in real-world environments.

Annotations for the 3-D Model:

- Annotations detailing the functionality and specifications of electrical components.
- IntelliScan highlighting circuit paths, component types, and voltage/current values.

Assessment Creation:

- Quizzes on electrical principles, component identification, and circuit analysis.
- Tasks challenging students to design functional circuits or identify faults in existing ones.

AI Generated Universal Skill Simulator:

- Engage with AR simulations demonstrating the assembly, testing, and optimization of electrical circuits.
- AI-driven visualizations of electrical current flow and circuit responses.

Interactive Simulation Scenarios:

- AR scenarios portraying a lab setup for circuit testing or an industrial electrical system in operation.
- Hands-on simulations for circuit building, analysis, and troubleshooting.

Incident Simulation:

- Address incidents like short circuits, component failures, or system overloads.
- Engage in AR simulations to diagnose, rectify, and understand these incidents.

Power Systems and Renewable Energy Simulations

Journey through the world of power systems and renewable energy sources. Experience the might of power generation, distribution, and the promise of sustainable energy solutions with the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Hero image showcasing a power grid, wind turbines, and solar panels.
- 10 floating knowledge portals emphasizing:
    - Introduction to power systems.
    - Power generation techniques.
    - Transmission and distribution systems.
    - Basics of renewable energy.
    - Solar energy systems.
    - Wind energy fundamentals.
    - Hydro and geothermal energy insights.
    - Grid integration of renewables.
    - Energy storage solutions.
    - Future trends in sustainable power.

3-D Model Integration:

- Visualize detailed 3-D models of power plants, renewable energy setups, and grid systems.
- Option for users to view their custom renewable energy designs in a simulated environment.

Annotations for the 3-D Model:

- Annotations explaining power generation techniques, renewable energy mechanisms, and storage solutions.
- IntelliScan to identify energy sources, power outputs, and system integrations.

Assessment Creation:

- Quizzes covering power systems, renewable technologies, and energy storage.
- Tasks to design sustainable energy solutions or optimize existing power systems.

AI Generated Universal Skill Simulator:

- Engage with simulations showcasing the operations of power plants, renewable installations, and grid systems.
- AI-driven animations demonstrating energy flow, generation, and storage processes.

Interactive Simulation Scenarios:

- Simulate scenarios like a solar farm at peak operation or a power grid during high demand.
- Hands-on tasks to optimize power distribution, enhance renewable output, or integrate storage solutions.

Incident Simulation:

- Address challenges like power outages, renewable system inefficiencies, or grid instabilities.
- Engage with simulations to resolve, optimize, and understand these power-related incidents.

Mechanical Engineering

Fluid Mechanics and Thermal Systems in VR

Delve into the intricacies of fluid dynamics and thermal systems using virtual reality powered by the EON AI Assistant. Understand fluid behavior, thermodynamic principles, and visualize complex systems in an immersive environment.

Knowledge Portal with Floating Annotations:

- Display a hero image of fluid flow patterns and thermal system diagrams.
- 10 floating knowledge portals encompass:
    - Principles of fluid mechanics.
    - Concepts of thermodynamics.
    - Hydrostatics and buoyancy.
    - Heat transfer mechanisms.
    - Fluid machinery and pumps.
    - Energy equations and thermal efficiency.
    - Flow measurements and instrumentation.
    - Real-world applications of fluid mechanics.
    - Thermal system designs and optimizations.
    - Computational fluid dynamics (CFD) simulations.

3-D Model Integration:

- Experience 3-D models of pumps, turbines, and intricate fluid systems.
- Illustrative models of heat exchangers, boilers, and refrigeration systems.
- Opportunity to upload and visualize personal fluid dynamics simulations.

Annotations for the 3-D Model:

- Floating annotations detailing different fluid machinery parts and thermal system components.
- IntelliScan feature for recognizing various fluid patterns and thermal behaviors.

Assessment Creation:

- Quizzes on fluid mechanics equations, thermodynamic cycles, and system efficiency.
- Challenges involving identifying various fluid machinery and predicting system behaviors.

AI Generated Universal Skill Simulator:

- Engage with standard processes in fluid mechanics and thermal system analysis.
- AI-driven 3-D animations showing fluid flow, heat transfer processes, and system operations.
- Simulate fluid and thermal experiments, with AI assessing performance and outcomes.

Interactive Simulation Scenarios:

- AI-identified scenarios like setting up a refrigeration system or analyzing fluid flow in pipelines.
- Interact and modify fluid systems using EON's platform, visualizing changes in real-time.

Incident Simulation:

- Encounter challenges like system leaks, inefficient heat transfer, or pump malfunctions.
- Engage with solutions and optimizations to address these real-world incidents.

Mechanics of Materials and Structural Analysis

Engage deeply with the principles of material mechanics and structural analysis using EON's cutting-edge AI technology. From stress-strain curves to analyzing complex structures, experience it all in an interactive environment.

Knowledge Portal with Floating Annotations:

- Hero image showcasing stress-strain curves and structural blueprints.
- 10 floating knowledge portals that include:
    - Basics of material mechanics.
    - Stress and strain concepts.
    - Bending, torsion, and axial loads.
    - Properties of materials.
    - Structural stability and determinacy.
    - Load distribution in structures.
    - Beam and frame analysis.
    - Failure modes and fatigue.
    - Structural dynamics and vibrations.
    - Advanced computational techniques in structural analysis.

3-D Model Integration:

- 3-D models of beams, trusses, frames, and intricate structural systems.
- Explore illustrative models like bridges, towers, and buildings to understand load distribution.
- Upload and analyze personal structural designs in a 3-D environment.

Annotations for the 3-D Model:

- Annotations detailing material properties, structural elements, and load points.
- IntelliScan to identify different structural components and predict failure points.

Assessment Creation:

- Quizzes on material properties, structural design principles, and analysis techniques.
- Challenges involving predicting structural behaviors under various loads.

AI Generated Universal Skill Simulator:

- Engage with standard procedures in material testing and structural analysis.
- AI animations showing load application, structural deformations, and material behaviors.
- Simulate material tests and structural loadings, with AI comparing and assessing the results.

Interactive Simulation Scenarios:

- AI-driven scenarios like setting up a truss system or analyzing a skyscraper's load distribution.
- Modify and interact with structures using EON's platform to see real-time behavior changes.

Incident Simulation:

- Address challenges like structural failures, material cracks, or load imbalances.
- Strategize and implement solutions to ensure structural safety and longevity.

CAD/CAM and 3D Modeling in AR

Step into the futuristic world of CAD/CAM and 3D modeling using augmented reality with the EON AI Assistant. Draft, design, and visualize engineering models in AR, bringing designs to life.

Knowledge Portal with Floating Annotations:

- Hero image featuring CAD blueprints and 3D model renderings.
- 10 floating knowledge portals covering:
    - Introduction to CAD/CAM.
    - Principles of 3D modeling.
    - CAD software tools and interfaces.
    - CAM machinery and operations.
    - Prototyping and manufacturing using CAD/CAM.
    - Advanced modeling techniques.
    - Materials and manufacturing processes.
    - Real-world applications of CAD/CAM.
    - Future trends in CAD/CAM technology.
    - Integration of CAD/CAM with other engineering tools.

3-D Model Integration:

- 3-D AR models of machinery, components, and complex assemblies.
- Illustrative models like engines, machinery components, and architectural structures.
- Opportunity to upload and visualize personal CAD designs in augmented reality.

Annotations for the 3-D Model:

- Annotations detailing design dimensions, material properties, and manufacturing instructions.
- IntelliScan feature to recognize and interpret various design elements and components.

Assessment Creation:

- Quizzes on CAD tools, CAM operations, and 3D modeling principles.
- Challenges involving CAD design interpretation, CAM setup, or 3D model modifications.

AI Generated Universal Skill Simulator:

- Engage with CAD design processes and CAM machinery operations.
- Experience AI-generated 3-D animations of design-to-manufacture workflows.
- Draft, design, and simulate manufacturing operations, with AI assessing precision and outcomes.

Interactive Simulation Scenarios:

- AI scenarios showcasing the journey from CAD design to CAM manufacturing.
- Interact with designs, modify them, and visualize the manufacturing process in real-time using AR.

Incident Simulation:

- Address challenges like design errors, manufacturing mismatches, or machine malfunctions.
- Engage in solutions and optimizations to ensure precise designs and flawless manufacturing.

Civil Engineering

Construction Management and Site Simulation

Experience the intricate realm of construction management combined with realistic site simulations. Learn about project planning, site safety, resource management, and witness real-time construction site scenarios with the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Display a hero image of a bustling construction site.
- 10 floating knowledge portals covering:
    - Introduction to construction management.
    - Construction planning and resource allocation.
    - Site safety and regulations.
    - Equipment and machinery used in construction.
    - Sustainable construction practices.
    - Labor management and welfare.
    - Case studies of large-scale construction projects.
    - Risk management in construction.
    - Budgeting and cost control.
    - Project monitoring and closure.

3-D Model Integration:

- Navigate a 3-D construction site, exploring equipment, machinery, and ongoing construction phases.
- Examine models of construction cranes, bulldozers, and architectural blueprints.

- Opportunity to upload personal construction designs and simulate them in a virtual environment.

Annotations for the 3-D Model:

- Floating annotations detailing machinery functionalities, construction techniques, and safety protocols.
- IntelliScan highlights different construction phases, equipment details, and building materials.

Assessment Creation:

- Quizzes on construction techniques, safety regulations, and resource management.
- Challenges that ask students to plan construction schedules or allocate resources for simulated projects.

AI Generated Universal Skill Simulator:

- Engage with standard construction site procedures and management practices.
- Experience AI-generated 3-D animations of construction processes, equipment operations, and safety drills.
- Plan and execute a mini construction project and receive AI assessments on project efficiency and safety.

Interactive Simulation Scenarios:

- Experience AI-identified scenarios such as crane operations, concrete pouring, or scaffolding assembly.
- Simulate construction site challenges and tasks using EON Interact.

Incident Simulation:

- Encounter common incidents like equipment malfunctions, labor disputes, or safety breaches.
- Strategize solutions and corrective actions to address these incidents.

Transportation and Highway Engineering in VR

Step into the virtual realm of transportation and highway engineering. Understand road design principles, traffic management, and infrastructure planning, all while experiencing lifelike highway simulations via the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Hero image showcasing a vast highway network with diverse transportation modes.
- 10 floating knowledge portals delving into:
    - Basics of transportation engineering.
    - Principles of highway design.
    - Traffic flow theories and management.
    - Pavement materials and design.
    - Bridge and culvert design.
    - Toll plazas and traffic management systems.
    - Environmental considerations in highway planning.
    - Case studies of major highway projects.
    - Intelligent transportation systems.
    - Safety measures and regulations in highway design.

3-D Model Integration:

- Traverse a 3-D highway model, inspecting intersections, overpasses, and different road types.
- Investigate models of vehicles, toll booths, and intelligent traffic signals.
- Upload personal road designs and view them as 3-D virtual highways.

Annotations for the 3-D Model:

- Annotations explaining highway markings, traffic signs, and bridge structures.
- IntelliScan identifies different road surfaces, traffic patterns, and road safety features.

Assessment Creation:

- Quizzes on road design principles, traffic theories, and infrastructure planning.
- Challenges that involve designing virtual intersections or planning traffic flow for peak hours.

AI Generated Universal Skill Simulator:

- Delve into standard transportation engineering procedures and highway design practices.
- Engage with AI-generated animations showcasing highway construction, traffic flow simulations, and safety protocol demonstrations.
- Design and assess a section of a virtual highway, receiving AI feedback on efficiency and safety.

Interactive Simulation Scenarios:

- AI-generated scenarios like a highway expansion project or traffic bottleneck management.
- Simulate traffic management tasks and highway design challenges using EON Interact.

Incident Simulation:

- Address incidents such as highway blockages, accidents, or infrastructure damage.
- Formulate solutions and preventive measures to handle these challenges.

Structural Dynamics and Earthquake Engineering

Delve deep into the world of structural dynamics and understand the effects of earthquakes on buildings and infrastructure. With the EON AI Assistant, experience virtual tremors, design earthquake-resistant structures, and understand the science behind seismic activities.

Knowledge Portal with Floating Annotations:

- Hero image of a building standing tall amidst an earthquake.
- 10 floating knowledge portals encompassing:
    - Introduction to structural dynamics.
    - Basics of earthquake engineering.
    - Seismic waves and ground motion.
    - Design of earthquake-resistant structures.
    - Soil-structure interaction.
    - Retrofitting and reinforcement techniques.
    - Tsunamis and secondary earthquake effects.
    - Case studies of major earthquakes and their impacts.
    - Seismic hazard assessment and mitigation.
    - Building codes and regulations for seismic design.

3-D Model Integration:

- Interact with a 3-D building model, understanding its response to various earthquake intensities.
- View models of different building types, foundations, and reinforcement techniques.

- Upload personal structural designs and test their earthquake resilience in a virtual environment.

Annotations for the 3-D Model:

- Annotations detailing building materials, structural reinforcements, and earthquake damage patterns.
- IntelliScan to identify structural weak points, seismic wave patterns, and damage prevention techniques.

Assessment Creation:

- Quizzes on seismic theories, building design principles, and earthquake effects.
- Challenges that ask students to design earthquake-resistant buildings or identify structural weak points.

AI Generated Universal Skill Simulator:

- Engage in standard structural design practices and earthquake engineering techniques.
- Experience AI-generated 3-D animations showing buildings during earthquakes, soil responses, and reinforcement methods.
- Design and test a virtual structure's response to earthquakes, with AI assessing its stability and safety.

Interactive Simulation Scenarios:

- AI-generated scenarios like building during an earthquake or the aftermath of a major seismic event.
- Simulate structural reinforcement tasks and earthquake prediction techniques using EON Interact.

Incident Simulation:

- Address incidents such as building collapses, infrastructure damage, or aftershock challenges.
- Learn and apply techniques to predict, prevent, and mitigate such incidents.

Faculty of Architecture

Architecture and Design

Architectural Visualization and Rendering in VR

Delve into the intricate world of architectural visualization and immerse yourself in breathtaking virtual reality renderings. Explore the nuances of architectural design, witness stunning 3D representations, and learn about the future of VR in architecture.

Knowledge Portal with Floating Annotations:

- Display a hero image showcasing a blend of architectural blueprints and VR headset.
- 10 floating knowledge portals discussing:
    - Introduction to architectural visualization.
    - Basics of 3D modeling for architecture.
    - Techniques in photorealistic rendering.
    - Role of VR in architectural visualization.
    - Tools and software utilized in VR rendering.
    - Lighting and texture in architectural VR.
    - Environmental and context rendering.
    - Evolution of architectural VR.
    - Case studies of iconic architectural VR projects.
    - Future trends in VR architecture.

3-D Model Integration:

- Experience a 3-D walkthrough of iconic buildings from a virtual perspective.
- Engage with interactive VR representations of architectural marvels.
- Option to integrate personal architectural designs for VR visualization.

Annotations for the 3-D Model:

- Floating annotations elaborating on design elements, materials, and sustainability features.
- IntelliScan detailing architectural styles, structures, and design elements.

Assessment Creation:

- Quizzes on architectural design principles, VR rendering techniques, and software tools.
- Challenges to recognize architectural styles from VR perspectives.

AI Generated Universal Skill Simulator:

- Engage with standard visualization procedures and rendering techniques.
- AI-driven 3-D animations illustrating VR rendering processes, light simulations, and environment creation.
- Test and refine VR architectural projects, receiving AI-based feedback.

Interactive Simulation Scenarios:

- AI-generated scenarios like an architectural studio, VR rendering sessions, and client presentations.
- Design and refine VR architectural concepts using EON Interact.

Incident Simulation:

- Address common issues in architectural VR like distorted perspectives or lighting anomalies.
- Learn strategies to rectify and enhance VR architectural visualizations.

Urban Planning and Landscape Design

Navigate the dynamic realm of urban planning and landscape design, powered by EON AI. Grasp the balance between nature and urbanization, design sustainable cities, and envision green spaces that rejuvenate urban life.

Knowledge Portal with Floating Annotations:

- Display a hero image representing a cityscape merging with lush landscapes.
- 10 floating knowledge portals elaborating:
    - Fundamentals of urban planning.
    - Role of landscape design in urban environments.
    - Tools and software for urban and landscape design.
    - Sustainable urban development.
    - Historical evolution of urban landscapes.
    - Green spaces and urban parks.
    - Transportation and infrastructure planning.
    - Water features and their role in urban landscapes.
    - Urban ecology and biodiversity.
    - Case studies of exemplary urban planning projects.

3-D Model Integration:

- Dive into a 3-D representation of thriving urban centers, parks, and transportation hubs.
- Explore landscape designs, green rooftops, and urban plazas.
- Incorporate personal urban designs and landscape creations.

Annotations for the 3-D Model:

- Annotations emphasizing urban structures, green spaces, and design elements.
- IntelliScan highlighting urban planning strategies, landscape features, and sustainable designs.

Assessment Creation:

- Quizzes on urban planning theories, landscape design principles, and sustainability metrics.
- Challenges identifying influential urban planning projects or deciphering landscape designs.

AI Generated Universal Skill Simulator:

- Engage with core urban planning procedures and landscape design principles.
- AI-driven animations visualizing the evolution of cities, green spaces, and urban transformation.
- Design and adapt urban landscapes, receiving insights and evaluations from the AI.

Interactive Simulation Scenarios:

- AI-led scenarios showcasing city planning sessions, landscape design brainstorms, and community engagements.
- Develop and fine-tune urban designs and green spaces using EON Interact.

Incident Simulation:

- Encounter challenges like urban sprawl, degradation of green spaces, or infrastructure bottlenecks.
- Strategize, adapt, and find solutions to these urban planning and landscape dilemmas.

History of Thai Architecture in AR

Embark on a captivating journey through the rich history of Thai architecture using augmented reality. Discover the splendor of temples, palaces, and traditional Thai homes, and understand their cultural significance.

Knowledge Portal with Floating Annotations:

- Display a hero image encapsulating the essence of Thai architectural grandeur.
- 10 floating knowledge portals featuring:
    - Introduction to Thai architectural history.
    - Evolution of Thai temple architecture.
    - Significance of water in Thai designs.
    - Traditional Thai homes and their features.
    - Influence of Buddhism on Thai architecture.
    - Royal palaces and their architectural brilliance.
    - Materials and techniques in traditional Thai buildings.
    - Adaptation of modern architecture in Thailand.
    - Iconic Thai architectural landmarks.
    - Future of Thai architecture.

3-D Model Integration:

- Experience AR overlays of iconic Thai temples, palaces, and homes.
- Engage with detailed models of architectural elements like Thai roofs, chofas, and carved wooden panels.
- Option to overlay personal architectural designs in Thai style.

Annotations for the 3-D Model:

- AR annotations detailing the significance, history, and elements of Thai architectural marvels.
- IntelliScan offering insights into Thai motifs, design principles, and cultural symbols.

Assessment Creation:

- Quizzes on Thai architectural history, design principles, and cultural influences.
- Challenges to recognize Thai architectural styles, elements, and significant structures.

AI Generated Universal Skill Simulator:

- Engage with architectural techniques and designs prevalent in Thai history.

- AI-generated animations visualizing the construction of Thai temples, palaces, and traditional homes.
- Design Thai architectural models, getting feedback and evaluations from the AI.

Interactive Simulation Scenarios:

- AI-curated scenarios reflecting the ambiance of Thai architectural eras, temple constructions, and urban development.
- Design and enhance Thai architectural concepts using EON Interact.

Incident Simulation:

- Address challenges in Thai architectural conservation, modern adaptations, or design intricacies.
- Strategize and adapt to ensure the essence of Thai architecture remains intact while meeting modern needs.

Faculty of Information Technology

Computer Science and Software Engineering

Virtual Reality Programming and Design

Uncover the realms of Virtual Reality (VR) by merging programming and design techniques with the revolutionary EON AI Assistant. Explore VR platforms, hone your design skills, and build interactive VR environments.

Knowledge Portal with Floating Annotations:

- Hero image showcasing VR headsets and an immersive digital environment.
- 10 floating knowledge portals:
    - Introduction to VR.
    - Platforms and tools for VR programming.
    - Design principles for immersive environments.
    - User Experience (UX) in VR.
    - Understanding VR scripting.
    - Physics and interactivity in VR.
    - 3D modeling for VR.
    - Lighting and textures in virtual environments.
    - VR in gaming vs. VR in education.

- Future trends in VR.

3-D Model Integration:

- Explore a 3-D interactive VR headset and a simulated digital realm.
- Illustrative models include VR controllers, motion sensors, and VR game environments.
- Option to upload and view personal VR designs.

Annotations for the 3-D Model:

- Annotations on headset functionalities, motion tracking, and environment interaction.
- IntelliScan highlighting VR components, tracking systems, and script functionalities.

Assessment Creation:

- Quizzes on VR programming languages, design aesthetics, and VR platforms.
- Tasks prompting users to identify popular VR games, applications, or design flaws.

AI Generated Universal Skill Simulator:

- Standard VR programming and design processes demonstrated.
- AI-generated 3-D animations of a VR game creation or designing a virtual environment.
- Practice building basic VR environments with AI guidance and feedback.

Interactive Simulation Scenarios:

- AI-driven scenarios like a VR game brainstorm or designing for VR education.
- Simulate VR scripting or design tweaks using EON Interact.

Incident Simulation:

- Address common challenges in VR, such as motion sickness or interaction glitches.
- Engage in solutions and strategies to enhance user experience.

Data Structures and Algorithm Simulation

Delve into the intricate world of data structures and algorithms. With the EON AI Assistant, visualize complex data types and simulate algorithms in augmented and virtual reality.

Knowledge Portal with Floating Annotations:

- Hero image displaying algorithms in action or data structures like trees and graphs.
- 10 floating knowledge portals:
    - Introduction to data structures.
    - Understanding basic algorithms.
    - Trees, graphs, and their traversal.
    - Sorting and searching algorithms.
    - Dynamic programming and memoization.
    - Complexity analysis and Big O notation.
    - Hashing and hash tables.
    - Queues and stacks in real-world applications.
    - Algorithm optimization.
    - Recent advancements in algorithmic research.

3-D Model Integration:

- Experience a 3-D representation of data structures like binary trees, heaps, and hash tables.
- Illustrative examples include sorting animations, search operations, and graph representations.
- Opportunity to upload and simulate personal algorithm solutions.

Annotations for the 3-D Model:

- Annotations explaining data nodes, algorithm steps, and complexity factors.
- IntelliScan for identifying various data structures and algorithm types.

Assessment Creation:

- Quizzes on different data structures, algorithm functions, and optimization techniques.
- Challenges to identify the correct algorithm for given scenarios or to spot inefficiencies.

AI Generated Universal Skill Simulator:

- Engage with standard procedures in algorithm design and data structuring.
- Watch AI-generated animations demonstrating algorithm flows or data structure operations.
- Test and design algorithms, receiving feedback from the AI.

Interactive Simulation Scenarios:

- AI-identified scenarios like algorithm optimization sessions or data structuring challenges.
- Design and tweak algorithms using the EON Interact tool.

Incident Simulation:

- Encounter challenges like data overflow, algorithm inefficiencies, or looping errors.
- Strategize and rectify these algorithmic challenges.

Network Security and Cybersecurity in AR

Navigate the complex terrains of network security and cybersecurity using augmented reality. The EON AI Assistant offers a detailed look into network infrastructures, potential vulnerabilities, and defense mechanisms.

Knowledge Portal with Floating Annotations:

- Hero image capturing a secure network or a cybersecurity operations center.
- 10 floating knowledge portals:
    - Basics of network security.
    - Understanding cybersecurity threats.
    - Firewalls and intrusion detection systems.
    - Malware, ransomware, and their countermeasures.
    - VPNs and secure network communication.
    - Cryptography and data encryption.
    - Ethical hacking and penetration testing.
    - Security policies and compliance.
    - Incident response and disaster recovery.
    - Future trends in cybersecurity.

3-D Model Integration:

- Explore 3-D models of a network infrastructure, server rooms, and cybersecurity tools.

- Illustrative examples include firewall structures, encrypted data flows, and hacking simulations.
- Upload and analyze personal network designs in AR.

Annotations for the 3-D Model:

- Annotations on network components, data transmission paths, and security protocols.
- IntelliScan to identify security vulnerabilities or encryption techniques.

Assessment Creation:

- Quizzes on security protocols, threat types, and network architectures.
- Scenarios where users identify potential vulnerabilities or suggest security enhancements.

AI Generated Universal Skill Simulator:

- Engage with standard network setups and cybersecurity procedures.
- AI-driven animations demonstrating a security breach or the workings of a firewall.
- Practice setting up secure networks and identifying potential threats.

Interactive Simulation Scenarios:

- AI scenarios showcasing a network under attack or the setup of security protocols.
- Design and implement security measures using EON Interact.

Incident Simulation:

- Address common network security issues like DDoS attacks, phishing attempts, or unauthorized access.
- Engage with solutions and best practices in cybersecurity.

Digital Media and Game Design

3D Animation and Character Design in VR

Dive into the immersive realm of 3D animation and character design in virtual reality. Using the EON AI Assistant, students will get hands-on experience designing intricate characters and animating them in a three-dimensional space.

Knowledge Portal with Floating Annotations:

- Hero image showcasing a dynamic 3D character in action.
- 10 floating knowledge portals highlighting:
    - Basics of 3D animation.
    - Principles of character design.
    - Character anatomy and movement.
    - 3D modeling tools and software.
    - Texturing and shading techniques.
    - Rigging and skinning processes.
    - Animation timelines and keyframes.
    - Advanced animation techniques.
    - Character storytelling and emotion.
    - Industry case studies of iconic 3D characters.

3-D Model Integration:

- View 3D models of characters at different stages of design and animation.
- Illustrative models like wireframes, textured characters, rigged models, and animated sequences.
- Opportunity to upload and animate personal character designs.

Annotations for the 3-D Model:

- Annotations detailing character anatomy, movement joints, and design principles.
- IntelliScan feature providing insights into textures, shaders, and animation curves.

Assessment Creation:

- Quizzes on animation principles, character design techniques, and software functionalities.
- Challenges to create simple animations or design character mock-ups.

AI Generated Universal Skill Simulator:

- Engage with the process of 3D animation and character creation.
- Experience AI-guided animations showcasing character movement and emotion.
- Design and animate your characters, receiving AI feedback.

Interactive Simulation Scenarios:

- AI-generated scenarios like a virtual animation studio or a character design workshop.
- Simulate character animation sequences and receive feedback using EON Interact.

Incident Simulation:

- Address challenges like animation glitches, character rigging issues, or texture anomalies.
- Work through solutions and best practices in 3D animation and design.

Game Mechanics and Level Design

Embark on an exploratory journey into the core of game design. Learn about intricate game mechanics and dive deep into the art of crafting compelling levels with the help of EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Hero image of a captivating game level in action.
- 10 floating knowledge portals offering insights on:
    - Introduction to game mechanics.
    - Principles of level design.
    - Player psychology and behavior.
    - Balance and difficulty scaling.
    - Environmental design and aesthetics.
    - Interactive elements and triggers.
    - Level testing and feedback loops.
    - Progression and reward systems.
    - Player flow and level pacing.
    - Case studies of iconic game levels.

3-D Model Integration:

- Navigate through 3D models of game levels and interactive elements.

- Illustrative models showcasing varying level complexities, environmental designs, and interactive triggers.
- Opportunity to upload and design personal game levels.

Annotations for the 3-D Model:

- Annotations highlighting key level design elements, player paths, and game mechanics.
- IntelliScan feature providing insights into interactive elements, level aesthetics, and player challenges.

Assessment Creation:

- Quizzes on game mechanics, level design principles, and player psychology.
- Challenges to design level segments or implement specific game mechanics.

AI Generated Universal Skill Simulator:

- Engage with the design process of game mechanics and levels.
- AI demonstrations of level design techniques and mechanic integrations.
- Craft and test game mechanics with AI feedback.

Interactive Simulation Scenarios:

- AI-driven scenarios like a game design brainstorm or a level testing session.
- Design and playtest game levels using EON Interact.

Incident Simulation:

- Tackle challenges in game mechanics or level design inconsistencies.
- Strategize and implement solutions, drawing from best practices in game design.

Interactive Storytelling and Narrative Design in AR

Step into the enchanting world of augmented reality storytelling. Understand the intricacies of crafting compelling narratives in AR and how to weave them seamlessly into the real world using the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Hero image portraying an augmented reality story scene.
- 10 floating knowledge portals discussing:

- Introduction to AR storytelling.
- Basics of narrative design.
- Merging story with physical environments.
- Tools and platforms for AR storytelling.
- Crafting AR characters and props.
- Pacing and progression in AR narratives.
- Audience engagement in AR.
- Immersion and believability.
- Case studies of successful AR stories.
- The future of AR storytelling.

3-D Model Integration:

- Experience 3D models of AR story scenes and characters.
- Illustrative examples like AR storybooks, character holograms, and interactive props.
- Opportunity to integrate personal stories into augmented reality.

Annotations for the 3-D Model:

- Annotations detailing AR story elements, character interactions, and narrative flow.
- IntelliScan feature highlighting AR technologies, story triggers, and interactive points.

Assessment Creation:

- Quizzes on AR storytelling principles, narrative techniques, and AR technologies.
- Challenges to design short AR story sequences or craft AR characters.

AI Generated Universal Skill Simulator:

- Engage with the creation process of AR stories.
- Experience AI-guided AR story sequences and character interactions.
- Design and execute AR narratives with AI assessments.

Interactive Simulation Scenarios:

- AI-conjured scenarios like an AR story brainstorm or a live AR story experience.
- Craft and experience AR story sequences using EON Interact.

Incident Simulation:

- Address challenges in AR storytelling, like immersion breaks or narrative inconsistencies.
- Develop solutions and best practices for AR narrative design.

Faculty of Science

Biology and Environmental Science

Molecular Biology and Genetics in VR

Embark on a virtual journey into the microscopic world of cells and DNA. Utilizing the EON AI Assistant, explore the intricate processes of genetics and molecular biology in an immersive VR environment.

Knowledge Portal with Floating Annotations:

- A hero image of a DNA double helix and cellular structures.
- 10 floating knowledge portals cover:
    - Introduction to molecular biology.
    - DNA, RNA, and protein synthesis.
    - Genetic mutations and variations.
    - Techniques in genetic engineering.
    - The human genome project.
    - Cell replication and division.
    - Molecular techniques like PCR and gel electrophoresis.
    - Genetic disorders and diseases.
    - Epigenetics and gene expression.
    - Biotechnological applications of molecular biology.

3-D Model Integration:

- Dive into a 3-D model of a cell, exploring its organelles and DNA structure.
- Visualize illustrative models like DNA replication machinery, RNA transcription, and genetic modifications.
- Engage with 3-D models of laboratory equipment used in molecular research.

Annotations for the 3-D Model:

- Annotations on DNA bases, cellular components, and molecular processes.
- IntelliScan highlights key molecular structures and genetic markers.

Assessment Creation:

- Quizzes on DNA synthesis, cellular functions, and genetic mutations.
- Challenges to identify molecular structures or predict genetic outcomes.

AI Generated Universal Skill Simulator:

- Experience standard molecular and genetic experiments.
- Watch AI-generated 3-D animations of DNA replication, protein formation, and genetic engineering.
- Simulate laboratory procedures and get assessed on technique proficiency.

Interactive Simulation Scenarios:

- AI-driven scenarios like a genetic engineering lab or DNA sequencing room.
- Engage in genetic manipulations or molecular experiments using EON Interact.

Incident Simulation:

- Encounter genetic anomalies or molecular experiment challenges.
- Strategize and solve these incidents, learning molecular troubleshooting techniques.

Environmental Impact and Sustainability Studies

Navigate the complexities of our planet's environment and the sustainability challenges we face. Through the EON AI Assistant, delve deep into ecological studies, conservation efforts, and the human impact on our world.

Knowledge Portal with Floating Annotations:

- A hero image of a pristine environment juxtaposed with a polluted one.
- 10 floating knowledge portals exploring:
    - Introduction to environmental science.
    - Climate change and global warming.
    - Pollution sources and effects.
    - Renewable energy and green technologies.
    - Conservation and biodiversity.
    - Urbanization and its environmental impact.
    - Oceans and marine conservation.
    - Sustainable agriculture and food production.
    - Greenhouse gases and carbon footprint.

- Future predictions and environmental technologies.

3-D Model Integration:

- A 3-D representation of diverse ecosystems, polluted cities, and renewable energy plants.
- View illustrative examples of carbon cycles, deforestation effects, and marine ecosystems.

Annotations for the 3-D Model:

- Annotations on ecosystem components, pollution sources, and sustainable alternatives.
- IntelliScan for recognizing endangered species, pollution levels, and green technologies.

Assessment Creation:

- Quizzes on ecological cycles, environmental threats, and sustainable solutions.
- Challenges to recognize green technologies or predict environmental changes.

AI Generated Universal Skill Simulator:

- Experience virtual field trips to diverse ecosystems and polluted urban centers.
- Engage with 3-D animations showcasing deforestation, coral bleaching, and renewable energy generation.
- Assess the environmental impact of various human activities.

Interactive Simulation Scenarios:

- AI-identified scenarios such as an oil spill cleanup or a renewable energy farm setup.
- Engage in sustainable projects and environmental assessments using EON Interact.

Incident Simulation:

- Confront challenges like ecosystem disruptions or unexpected pollution spikes.
- Engage in solutions and conservation strategies to mitigate these issues.

Botany and Plant Biology in AR

Dive into the captivating world of plants and their intricate systems. With the EON AI Assistant in augmented reality, uncover the secrets of photosynthesis, plant physiology, and the vast diversity of the plant kingdom.

Knowledge Portal with Floating Annotations:

- Hero image featuring diverse plants from ferns to flowering species.
- 10 floating knowledge portals that encompass:
    - Introduction to botany.
    - Plant cellular structures.
    - Photosynthesis and respiration.
    - Plant reproduction and growth.
    - Adaptations and plant behaviors.
    - Medicinal and economic importance of plants.
    - Plant taxonomy and classification.
    - Evolution of the plant kingdom.
    - Biomes and plant distribution.
    - Conservation and threats to plant biodiversity.

3-D Model Integration:

- Explore 3-D models of diverse plants, their cellular structures, and their growth patterns.
- Visualize illustrative examples like the photosynthesis process, plant reproductive organs, and unique plant adaptations.

Annotations for the 3-D Model:

- Annotations detailing plant parts, cellular functions, and growth stages.
- IntelliScan for plant species identification, understanding physiological processes, and recognizing plant diseases.

Assessment Creation:

- Quizzes on plant physiology, botanical classifications, and plant behaviors.
- Challenges to identify plant species, recognize plant diseases, or predict growth patterns.

AI Generated Universal Skill Simulator:

- Engage with standard botanical experiments and plant growth observations.

- Experience 3-D animations of plant growth stages, photosynthesis in action, and plant responses to stimuli.
- Conduct virtual plant dissections and taxonomy classifications.

Interactive Simulation Scenarios:

- AI-created scenarios showcasing botanical gardens, rainforest explorations, or agricultural advancements.
- Engage in plant breeding simulations or conservation projects using EON Interact.

Incident Simulation:

- Encounter challenges like plant disease outbreaks or invasive species threats.
- Strategize and develop solutions for these botanical challenges, understanding the importance of plant health and biodiversity.

Physics and Materials Science

Quantum Mechanics Simulations

Dive into the enigmatic world of quantum mechanics using the EON AI Assistant. Visualize quantum phenomena, experience simulations of fundamental principles, and explore the very fabric of our universe in this immersive course.

Knowledge Portal with Floating Annotations:

- Display a hero image of quantum visualizations or particle interactions.
- 10 floating knowledge portals including:
    - Introduction to quantum mechanics.
    - Fundamental principles and postulates.
    - Wave-particle duality.
    - Quantum entanglement and superposition.
    - Quantum tunneling.
    - Quantum computing basics.
    - The role of observers in quantum events.
    - Uncertainty principle.
    - Quantum states and quantum mechanics in action.
    - Potential future applications of quantum principles.

3-D Model Integration:

- Experience a 3-D model of a quantum computer or a simulated quantum event.
- Explore models like particle interactions, quantum states, and potential quantum devices.
- Opportunity to input data for quantum simulations and see them realized in 3-D.

Annotations for the 3-D Model:

- Annotations detailing quantum states, entanglement principles, and more.
- IntelliScan feature to highlight quantum phenomena and principles.

Assessment Creation:

- Quizzes on fundamental principles of quantum mechanics.
- Challenges to decipher quantum phenomena or predict outcomes of quantum experiments.

AI Generated Universal Skill Simulator:

- Engage with standard quantum simulations.
- Experience AI-generated 3-D animations illustrating quantum phenomena like entanglement or tunneling.
- Predict and analyze quantum outcomes with real-time AI feedback.

Interactive Simulation Scenarios:

- AI-driven scenarios such as quantum computing tasks or particle interaction simulations.
- Use EON Interact to adjust quantum parameters and see real-time effects.

Incident Simulation:

- Address quantum paradoxes or complex scenarios in quantum mechanics.
- Strategize and comprehend these phenomena, deepening understanding and application.

Advanced Materials and Nanotechnology in VR

Step into the forefront of material science and nanotechnology with the EON AI Assistant. Experience the micro and nano worlds in VR, explore cutting-edge materials, and understand the intricacies of nanotech applications.

Knowledge Portal with Floating Annotations:

- Hero image showcasing nanomaterials or nanotechnology applications.
- 10 floating knowledge portals covering:
    - Introduction to advanced materials.
    - Basics of nanotechnology.
    - Carbon nanotubes and graphene.
    - Nanoscale fabrication techniques.
    - Biomedical applications of nanotech.
    - Nanomaterial properties and applications.
    - Potential risks and ethics of nanotechnology.
    - Nanosensors and nano devices.
    - Evolution and future of nanotechnology.
    - Real-world applications and case studies.

3-D Model Integration:

- Venture into a 3-D nanofabrication lab or view nanomaterial structures.
- Models like nanotubes, nanobots, and nanoscale devices.
- Upload personal research or data to visualize nanostructures in VR.

Annotations for the 3-D Model:

- Detailed annotations on nanomaterial properties, fabrication methods, and more.
- IntelliScan to identify and explain nanotech applications and functions.

Assessment Creation:

- Quizzes on nanomaterial properties, nanotech principles, and applications.
- Challenges to design or predict behaviors of nanoscale devices and materials.

AI Generated Universal Skill Simulator:

- Engage with standard nanotech experiments and material explorations.
- Witness AI-generated 3-D animations of nanoscale interactions, fabrications, and applications.
- Engage in virtual nanotech tasks with real-time AI feedback.

Interactive Simulation Scenarios:

- AI-driven scenarios like nanofabrication processes or testing nanomaterial properties.
- Use EON Interact to design and assess nanodevices or nanomaterials.

Incident Simulation:

- Tackle challenges in nanotechnology, such as material failures or unforeseen reactions.
- Understand and strategize around these challenges, improving nanotech proficiency.

Optics and Photonics Experiments in AR

Illuminate your understanding of optics and photonics using the EON AI Assistant. Conduct virtual experiments in AR, understand light phenomena, and explore the boundless applications of photonics in today's tech landscape.

Knowledge Portal with Floating Annotations:

- Hero image of a prism dispersing light or a photonic circuit.
- 10 floating knowledge portals encompassing:
    - Introduction to optics and photonics.
    - Light properties and behaviors.
    - Reflection, refraction, and dispersion.
    - Photonic devices and circuits.
    - Applications of optics in everyday technology.
    - Fiber optics and communication.
    - Lasers and their applications.
    - Optical sensors and imaging.
    - Future of photonics and emerging technologies.
    - Hands-on experiments and case studies.

3-D Model Integration:

- Dive into a 3-D optical lab, interacting with lenses, mirrors, and photonic devices.
- Models such as lasers, optical fibers, and photonic circuits.
- Upload personal designs to visualize optical systems in AR.

Annotations for the 3-D Model:

- Annotations explaining light behaviors, optical components, and photonic systems.
- IntelliScan highlighting and elucidating complex optical phenomena.

Assessment Creation:

- Quizzes on optical principles, light behaviors, and photonics applications.
- Challenges to design optical systems or predict outcomes of photonic experiments.

AI Generated Universal Skill Simulator:

- Engage in standard optics and photonics experiments.
- Watch AI-generated 3-D animations of light behaviors, device functions, and more.
- Conduct virtual optics experiments with AI feedback.

Interactive Simulation Scenarios:

- AI-driven scenarios such as setting up an optical experiment or designing a photonic circuit.
- Use EON Interact to modify light sources, adjust lenses, or reconfigure photonic devices.

Incident Simulation:

- Address optical challenges, such as interference patterns or device malfunctions.
- Analyze and strategize solutions, deepening optical and photonic expertise.

Chemistry and Biochemistry

Organic Chemistry Lab in VR

Immerse yourself in the captivating world of organic chemistry with a virtual reality lab experience. Explore organic compounds, conduct experiments, and understand chemical reactions like never before, all through the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Hero image of a bustling organic chemistry lab filled with colorful reactions.
- 10 floating knowledge portals featuring:
    - Introduction to organic chemistry.
    - Types of organic compounds.
    - Organic reactions and mechanisms.
    - Lab safety protocols.

- Distillation and purification methods.
- Chromatography techniques.
- Spectroscopy in organic chemistry.
- Synthesis of organic compounds.
- Reactivity and stability.
- Famous discoveries in organic chemistry.

3-D Model Integration:

- Navigate a virtual organic chemistry lab complete with apparatus, chemicals, and equipment.
- Engage with illustrative models of organic molecules, reaction mechanisms, and lab instruments.
- Import molecular structures and observe them in 3D.

Annotations for the 3-D Model:

- Annotations elucidating chemical structures, reaction pathways, and equipment usage.
- IntelliScan to identify various organic compounds and reactions.

Assessment Creation:

- Quizzes on organic nomenclature, reaction types, and laboratory techniques.
- Challenges to deduce reaction outcomes, predict products, or identify compounds from spectral data.

AI Generated Universal Skill Simulator:

- Engage with standard organic chemistry lab procedures.
- AI-generated 3-D animations demonstrating reactions, purification techniques, and analysis.
- Simulate organic reactions and get AI assessments on product yield and purity.

Interactive Simulation Scenarios:

- AI-driven scenarios like the synthesis of a complex molecule or the identification of unknown compounds.
- Simulate chromatographic separations or spectral analyses using EON Interact.

Incident Simulation:

- Address common lab incidents like chemical spills or unexpected reactions.
- Practice safety and remediation protocols in the virtual environment.

Biochemical Pathways and Metabolism

Venture into the intricate world of biochemistry and uncover the secrets of cellular metabolism. Explore metabolic pathways, enzyme actions, and energy transformations in vivid detail through the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Hero image showcasing a cellular environment teeming with metabolic activities.
- 10 floating knowledge portals highlighting:
    - Basics of metabolism.
    - Anabolic and catabolic pathways.
    - Glycolysis and the TCA cycle.
    - Oxidative phosphorylation.
    - Lipid metabolism.
    - Amino acid metabolism.
    - Hormonal regulation of metabolism.
    - Enzyme kinetics and regulation.
    - Energy balance and thermodynamics.
    - Metabolic disorders and diseases.

3-D Model Integration:

- Experience a 3-D visualization of a cell showcasing metabolic pathways.
- Examine illustrative models of enzymes, metabolites, and cellular organelles.
- Import and visualize specific metabolic pathways or protein structures.

Annotations for the 3-D Model:

- Annotations explaining metabolic steps, enzyme actions, and energy transformations.
- IntelliScan for recognizing different biochemical compounds and pathways.

Assessment Creation:

- Quizzes on metabolic pathways, enzyme actions, and regulatory mechanisms.
- Challenges to predict metabolic outcomes or identify pathways from given data.

AI Generated Universal Skill Simulator:

- Dive into standard biochemical procedures and metabolic pathways.
- AI-generated 3-D animations detailing the flow of energy and matter in a cell.

- Simulate metabolic reactions and get AI-driven feedback on pathway efficiency.

Interactive Simulation Scenarios:

- AI-identified scenarios, such as a cell responding to energy demand or adapting to nutrient availability.
- Simulate enzyme kinetics or metabolic flux analyses using EON Interact.

Incident Simulation:

- Engage with scenarios like metabolic imbalances or enzyme deficiencies.
- Understand and strategize therapeutic approaches to address metabolic disorders.

Inorganic and Analytical Chemistry in AR

Dive into the realm of inorganic and analytical chemistry with augmented reality enhancements. Examine complex inorganic structures, perform virtual titrations, and analyze chemical samples in an augmented environment powered by the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Hero image presenting a diverse array of inorganic compounds and analytical instruments.
- 10 floating knowledge portals delving into:
    - Introduction to inorganic chemistry.
    - Coordination compounds and complexes.
    - Metalloproteins and metalloenzymes.
    - Crystal field theory.
    - Analytical chemistry principles.
    - Titration techniques.
    - Spectroscopic methods in inorganic analysis.
    - Electroanalytical techniques.
    - Chromatographic separations in inorganic analysis.
    - Advanced instrumental methods.

3-D Model Integration:

- Interact with a virtual augmented inorganic lab, complete with samples, instruments, and equipment.

- Visualize 3-D models of inorganic complexes, crystal structures, and analytical apparatus.
- Import and study specific inorganic complexes or analytical data.

Annotations for the 3-D Model:

- Annotations detailing inorganic bonding, coordination geometries, and instrument functionalities.
- IntelliScan for recognizing inorganic compounds and analytical outcomes.

Assessment Creation:

- Quizzes focused on inorganic bonding, complex formations, and analytical outcomes.
- Challenges to deduce coordination numbers, predict spectra, or determine concentration from titration data.

AI Generated Universal Skill Simulator:

- Engage with standard inorganic synthesis and analytical procedures.
- AI-generated 3-D animations showcasing complex formation, crystal growth, or titration processes.
- Simulate inorganic reactions or analytical methods and get AI assessments on precision and accuracy.

Interactive Simulation Scenarios:

- AI-driven scenarios like synthesizing a novel inorganic complex or solving a real-world analytical problem.
- Simulate crystal growth, precipitation reactions, or instrument calibrations using EON Interact.

Incident Simulation:

- Address common challenges like impurity detection, spectral interferences, or equipment malfunctions.
- Learn troubleshooting techniques and best practices for accurate and reliable analyses.

Faculty of Agro-Industry

Food Science and Technology

Food Processing and Safety in VR

Embark on a virtual journey through the intricate world of food processing and safety. Experience firsthand the technologies and protocols that ensure our food remains safe, nutritious, and delicious, all within the immersive environment of VR.

Knowledge Portal with Floating Annotations:

- Feature a hero image displaying a state-of-the-art food processing unit.
- 10 floating knowledge portals covering:
    - Introduction to food processing.
    - Principles of food safety.
    - Modern machinery in food processing.
    - Quality assurance and control.
    - Pathogens and contamination prevention.
    - Food preservation methods.
    - The role of packaging in safety.
    - Sustainable food processing.
    - Nutritional considerations.
    - Food processing regulations and certifications.

3-D Model Integration:

- Explore a 3-D virtual food processing plant, from raw materials to packaged goods.
- View illustrative models of machinery, tools, and packaging methods.
- Upload personal designs for food processing machinery for a VR experience.

Annotations for the 3-D Model:

- Floating annotations explaining machinery functions, safety protocols, and quality checkpoints.
- IntelliScan feature to pinpoint and elaborate on safety measures and equipment parts.

Assessment Creation:

- Quizzes testing knowledge on food processing techniques, safety standards, and machinery functions.

- Identify key stages in food processing, spot potential hazards, and suggest improvements.

AI Generated Universal Skill Simulator:

- Engage with AI-driven simulations of food processing operations.
- Watch animations detailing food safety checks, machinery operations, and quality assurance.
- Demonstrate knowledge by identifying issues and rectifying them in a virtual environment.

Interactive Simulation Scenarios:

- Simulate food processing stages, ensuring safety and quality at every step using EON Interact.
- Face challenges like machinery malfunctions or contamination risks and solve them.

Incident Simulation:

- AI presents potential incidents like contamination outbreaks or machinery breakdowns.
- Users strategize solutions and implement safety protocols.

Dairy and Meat Technology Simulations

Experience the intricacies of dairy and meat technology using cutting-edge simulations. Dive deep into production, processing, and preservation of dairy and meat products while ensuring quality and safety.

Knowledge Portal with Floating Annotations:

- Hero image featuring dairy farms and meat processing units.
- 10 knowledge portals on:
    - Basics of dairy technology.
    - Meat processing fundamentals.
    - Dairy product varieties and their production.
    - Curing, smoking, and preservation of meats.
    - Quality control in dairy and meat industries.
    - Safety standards for dairy and meat processing.
    - Machinery used in both sectors.
    - Impact of technology on yield and quality.

- Ethical considerations in meat production.
- Future trends in dairy and meat technologies.

3-D Model Integration:

- Explore 3-D models of dairy farms, milk processing units, slaughterhouses, and meat curing facilities.
- Access illustrative examples of machinery, equipment, and production techniques.
- Option to view personal dairy or meat processing designs in simulations.

Annotations for the 3-D Model:

- Detailed annotations on equipment functions, product flow, and quality parameters.
- IntelliScan for deep dives into machinery operations, product stages, and safety protocols.

Assessment Creation:

- Quizzes on dairy processing stages, meat preservation techniques, and quality indicators.
- Identify correct processing sequences, machinery functions, and safety measures.

AI Generated Universal Skill Simulator:

- Engage with simulations on dairy pasteurization, cheese-making, meat curing, and more.
- Watch animations detailing each step, with an emphasis on maintaining product quality.
- Actively participate in virtual dairy and meat processing scenarios.

Interactive Simulation Scenarios:

- Use EON Interact to simulate dairy fermentation processes or meat packaging techniques.
- Experience real-world challenges and solve them within the simulation.

Incident Simulation:

- AI presents incidents like spoilage risks, machinery malfunctions, or quality inconsistencies.
- Strategize and implement solutions in a simulated environment.

Beverage Science and Fermentation in AR

Step into the fascinating world of beverages and fermentation using Augmented Reality. Understand the science, techniques, and art behind your favorite drinks, from wines to sodas.

Knowledge Portal with Floating Annotations:

- Feature a hero image of a bustling brewery or a serene vineyard.
- 10 floating knowledge portals on:
    - Basics of beverage science.
    - Fermentation fundamentals.
    - Brewing techniques.
    - Winemaking processes.
    - Distillation and spirits.
    - Soft drinks and their creation.
    - Beverage quality and sensory attributes.
    - Microbiology of fermentation.
    - Packaging and preservation of beverages.
    - Beverage industry regulations and certifications.

3-D Model Integration:

- Explore AR models of breweries, wineries, distilleries, and soft drink production units.
- View illustrative models of fermentation tanks, distillation columns, and bottling machinery.
- Opportunity to virtually experience one's own beverage recipe brewing.

Annotations for the 3-D Model:

- Annotations detailing each equipment's function, stages in beverage production, and quality checkpoints.
- IntelliScan to elaborate on fermentation microbiology, distillation principles, and flavor profiles.

Assessment Creation:

- Quizzes on beverage production steps, fermentation types, and sensory evaluations.
- Challenges to design virtual beverage recipes and predict their sensory outcomes.

AI Generated Universal Skill Simulator:

- Delve into AI-driven simulations of beer brewing, wine aging, and soft drink carbonation.
- Experience detailed animations of fermentation processes, flavor developments, and bottling operations.
- Participate and make decisions in virtual beverage production scenarios.

Interactive Simulation Scenarios:

- Use EON Interact to simulate distillation processes, wine aging scenarios, or carbonation techniques.
- Encounter and solve real-world challenges, such as inconsistent flavors or fermentation failures.

Incident Simulation:

- AI introduces incidents like contamination risks, flavor inconsistencies, or bottling issues.
- Strategize solutions, ensuring quality and safety of beverages.

Biotechnology and Bioresources

Genetic Engineering and CRISPR in VR

Delve into the groundbreaking realm of genetic engineering and CRISPR technologies using virtual reality with the EON AI Assistant. Witness the intricate processes of gene editing and understand the potential and ethics of reshaping life.

Knowledge Portal with Floating Annotations:

- Display a hero image highlighting DNA strands and CRISPR-Cas9 molecules.
- 10 floating knowledge portals elucidating:
    - Introduction to genetic engineering.
    - Basics of DNA and RNA.
    - CRISPR-Cas9 mechanism.
    - Applications of CRISPR in medicine.
    - Ethics of gene editing.
    - Past, present, and future of genetic engineering.

- Potential risks and challenges.
- Real-world case studies of gene therapies.
- Lab tools and techniques in gene editing.
- Regulatory landscapes in genetic engineering.

3-D Model Integration:

- Explore a 3-D rendition of the DNA double helix and the CRISPR-Cas9 system at work.
- Detailed models of genetic engineering equipment like microscopes, pipettes, and DNA sequencers.

Annotations for the 3-D Model:

- Annotations emphasizing DNA components, gene targets, and CRISPR functionalities.
- IntelliScan identifies gene patterns, mutations, and CRISPR-Cas9 interactions.

Assessment Creation:

- Quizzes on the basics of genetics, CRISPR mechanisms, and ethical considerations.
- Challenges to identify genetic disorders and potential CRISPR solutions.

AI Generated Universal Skill Simulator:

- Engage with gene editing simulations, observing DNA manipulations in real-time.
- Witness AI-driven 3-D animations of the CRISPR process, from target identification to successful edit.
- Test and predict CRISPR edits with AI feedback on efficiency and potential risks.

Interactive Simulation Scenarios:

- AI-identified scenarios of a genetic engineering lab, gene therapy sessions, or ethical debates.
- Simulate DNA extraction and CRISPR edits using EON Interact.

Incident Simulation:

- Confront challenges like unintended mutations or ethical dilemmas in gene therapy.
- Strategize and address these incidents with best practices in genetic engineering.

Plant and Animal Biotechnology

Journey through the wonders of biotechnology as it reshapes the flora and fauna around us. With EON AI Assistant, discover advancements in agriculture, animal husbandry, and the sustainable future of biotech.

Knowledge Portal with Floating Annotations:

- Hero image depicting genetically modified crops and lab-grown meat.
- 10 floating portals illustrating:
    - Introduction to biotechnology in agriculture.
    - Genetic modifications in plants.
    - Lab-grown meat and dairy.
    - Biotech solutions for food security.
    - Ethical considerations in animal biotech.
    - Sustainable agriculture with biotech.
    - Animal cloning and its applications.
    - Case studies: Golden rice, BT cotton.
    - Advances in aquaculture biotechnology.
    - The future of organic vs. biotech crops.

3-D Model Integration:

- 3-D models of genetically modified organisms (GMOs), biotech labs, and aquaculture facilities.
- Detailed visuals of biotech tools: gene guns, bioreactors, and cloning chambers.

Annotations for the 3-D Model:

- Annotations highlight GMO traits, lab equipment functionalities, and biotech processes.
- IntelliScan recognition for different GMOs, their benefits, and potential risks.

Assessment Creation:

- Quizzes on plant genetics, animal biotech advancements, and biotech's role in sustainability.
- Tasks to differentiate between GMOs and traditional crops or animals.

AI Generated Universal Skill Simulator:

- Simulate plant genetic modifications and lab-grown meat production.

- Watch AI-guided 3-D animations of cloning processes, crop modifications, and biotech aquaculture.

Interactive Simulation Scenarios:

- AI-driven scenarios like a biotech farm, a cloning lab, or a sustainable aquaculture facility.
- Simulate GMO cultivation or animal cloning processes using EON Interact.

Incident Simulation:

- Engage with challenges like GMO cross-contamination or ethical issues in animal cloning.
- Address and strategize around these biotech incidents.

Bioenergy and Biorefinery Processes in AR

Step into the future of sustainable energy with a deep dive into bioenergy and biorefinery processes. With augmented reality experiences by EON AI Assistant, understand how organic matter transforms into power and fuel.

Knowledge Portal with Floating Annotations:

- A hero image capturing a biorefinery and vibrant bioenergy crops.
- 10 floating portals that discuss:
    - Basics of bioenergy and its sources.
    - The science behind biorefineries.
    - Production of biofuels.
    - Algae-based bioenergy solutions.
    - Waste-to-energy processes.
    - Economic and environmental impacts.
    - Innovations in biorefinery technologies.
    - Comparisons with fossil fuels.
    - Sustainability and bioenergy.
    - The future of bioenergy in the global energy mix.

3-D Model Integration:

- Explore 3-D layouts of biorefineries, bioenergy crops, and waste-to-energy facilities.
- Models of equipment like bioreactors, fermenters, and distillation units.

Annotations for the 3-D Model:

- Detailed annotations on biorefinery processes, equipment functionalities, and bioenergy types.
- IntelliScan feature identifies different biofuels and their applications.

Assessment Creation:

- Quizzes on bioenergy sources, biorefinery mechanisms, and sustainability considerations.
- Tasks to differentiate between types of biofuels and their applications.

AI Generated Universal Skill Simulator:

- Engage with simulations of biofuel production and waste conversion processes.
- Experience AI-rendered animations of biorefinery operations and energy extraction.

Interactive Simulation Scenarios:

- AI-derived scenarios of a bustling biorefinery, algae cultivation farms, or waste processing units.
- Simulate the journey from organic matter to energy using EON Interact.

Incident Simulation:

- Navigate challenges like bioenergy crop diseases or inefficiencies in biorefinery processes.
- Strategize and learn how to mitigate these incidents for optimal bioenergy production.

Faculty of Industrial Education

Technical and Vocational Education

Machine Tool and Workshop Simulations

Experience the intricacies of machine tools and workshops through lifelike simulations. Delve into the mechanics of various tools and understand workshop operations, all within a captivating virtual environment.

Knowledge Portal with Floating Annotations:

- Display a hero image of a bustling workshop with various machine tools in action.
- 10 floating knowledge portals elucidating:
    - Introduction to machine tools.
    - Workshop safety protocols.
    - Types of machinery and their applications.
    - Basics of CNC machining.
    - Maintenance and calibration of tools.
    - Workshop layout and design.
    - Precision tools and measurements.
    - Mechanical versus electronic tools.
    - Modern advancements in machine tool technology.
    - Case studies of large-scale manufacturing workshops.

3-D Model Integration:

- Engage with 3-D models of lathes, milling machines, and other essential workshop tools.
- Explore detailed models like CNC machines, drill presses, and grinders.
- Opportunity to upload and visualize personal workshop designs.

Annotations for the 3-D Model:

- Floating annotations detailing functions and parts of each machine tool.
- IntelliScan feature to identify and explain the intricacies of complex machinery.

Assessment Creation:

- Quizzes on machine tool operations, workshop safety, and equipment identification.
- Challenges to sequence operations or identify the right tool for specific tasks.

AI Generated Universal Skill Simulator:

- Standard procedures of machine tool operations and workshop tasks demonstrated.
- AI-generated 3-D animations of machinery in action, guiding learners through processes.
- Practice tasks like calibration or tool changing, with AI assessments.

Interactive Simulation Scenarios:

- AI-identified scenarios like a tool change in a CNC machine or a workshop cleanup.
- Engage in simulated machine operations using EON Interact.

Incident Simulation:

- Address common workshop incidents like tool malfunctions or calibration errors.
- Solutions and strategies provided for each challenge.

Electronics and Communication Labs in VR

Immerse yourself in the dynamic world of electronics and communication through virtual labs. Understand circuits, delve into communication systems, and get hands-on experience, all in a virtual reality setting.

Knowledge Portal with Floating Annotations:

- Hero image showcasing a state-of-the-art electronics lab.
- 10 floating knowledge portals covering:
    - Basics of electronic circuits.
    - Communication system fundamentals.
    - Lab instruments and their uses.
    - Digital versus analog systems.
    - Microwave and RF communication.
    - Satellite and optical communication principles.
    - Integrated circuits and microcontrollers.
    - Signal processing and modulation.
    - Telecommunication networks.
    - Case studies of major electronics breakthroughs.

3-D Model Integration:

- Engage with 3-D models of oscilloscopes, signal generators, and other lab equipment.
- Detailed visualization of complex circuits and communication setups.
- Opportunity to virtually assemble and test personal electronic designs.

Annotations for the 3-D Model:

- Detailed annotations on equipment functions, circuit components, and signal pathways.

- IntelliScan feature to instantly recognize and explain intricate electronic components.

Assessment Creation:

- Quizzes on electronic concepts, signal types, and lab procedures.
- Challenges to troubleshoot virtual circuit malfunctions or optimize communication setups.

AI Generated Universal Skill Simulator:

- Procedures of electronic lab experiments and communication setups.
- AI-guided 3-D animations of lab tasks, from circuit assembly to signal analysis.
- Demonstrate electronic designs and receive AI feedback.

Interactive Simulation Scenarios:

- AI-driven scenarios like a satellite communication setup or a circuit debugging session.
- Assemble and test virtual electronic systems using EON Interact.

Incident Simulation:

- Tackle electronic mishaps like short circuits or communication disruptions.
- Step-by-step solutions and best practices provided for each scenario.

Industrial Safety and OSHA Standards in AR

Step into the realm of augmented reality to understand the significance of industrial safety and OSHA standards. Grasp safety protocols, equipment usage, and hazard identification in an interactive AR environment.

Knowledge Portal with Floating Annotations:

- Hero image showcasing an industrial setting adhering to safety standards.
- 10 floating knowledge portals highlighting:
    - Introduction to industrial safety.
    - Overview of OSHA and its significance.
    - Personal protective equipment (PPE) and its importance.
    - Safety protocols in various industries.
    - Hazard identification and mitigation.
    - Fire safety and emergency response.

- Electrical safety standards.
- Chemical and biological hazards.
- Ergonomics and workplace design for safety.
- Case studies of major industrial incidents and lessons learned.

3-D Model Integration:

- Engage with 3-D models of safety equipment, hazard signs, and industrial setups.
- Visualize safety scenarios, like a fire drill or an equipment lockdown.
- Opportunity to overlay personal industrial designs with AR safety markers.

Annotations for the 3-D Model:

- Annotations detailing the use of safety equipment, significance of hazard signs, and procedures during emergencies.
- IntelliScan feature to highlight potential hazards in a given industrial setup.

Assessment Creation:

- Quizzes on OSHA guidelines, equipment usage, and safety protocols.
- Challenges to identify potential hazards in virtual industrial settings or sequence emergency responses.

AI Generated Universal Skill Simulator:

- Standard safety procedures and hazard responses demonstrated.
- AI-driven 3-D animations guiding learners through safety drills or equipment usage.
- Demonstrate safety protocols and receive feedback from the AI.

Interactive Simulation Scenarios:

- AI scenarios like a chemical spill response or an electrical lockdown procedure.
- Engage in safety drills and emergency responses using EON Interact.

Incident Simulation:

- Address real-world industrial incidents, like equipment malfunctions or gas leaks.
- Strategies and solutions offered for each challenge in adherence to OSHA standards.

Faculty of Administration and Management

Business and International Business

Market Research and Consumer Behavior in VR

Dive into the innovative realm of market research and consumer behavior using virtual reality. Through the EON AI Assistant, gain insights into buyer personas, market trends, and purchasing patterns, all presented in an immersive VR environment.

Knowledge Portal with Floating Annotations:

- Display a hero image of a bustling marketplace or a consumer focus group.
- 10 floating knowledge portals covering:
    - Introduction to market research.
    - Techniques for gathering data.
    - Understanding consumer demographics.
    - Psychology behind buying decisions.
    - VR's role in modern market research.
    - Creating and interpreting surveys.
    - Observing consumer behavior in VR.
    - Predicting market trends.
    - Consumer focus groups and feedback.
    - Case studies of successful market research campaigns.

3-D Model Integration:

- Experience a 3-D virtual shopping mall, observing consumer choices and behaviors.
- Explore illustrative models of survey forms, data graphs, and market segments.
- Opportunity to upload and analyze personal market research data in VR.

Annotations for the 3-D Model:

- Floating annotations explaining market segments, data collection methods, and consumer behavior metrics.
- IntelliScan highlighting notable consumer patterns and behaviors in VR.

Assessment Creation:

- Quizzes focused on market research techniques, data interpretation, and predicting consumer choices.
- Challenges to interpret VR-based consumer behaviors and feedback.

AI Generated Universal Skill Simulator:

- Engage with key processes in market research and analyzing consumer behavior.
- Watch AI-generated VR simulations of a consumer's shopping journey and decision-making processes.
- Practice interpreting consumer behaviors and predicting market trends with AI feedback.

Interactive Simulation Scenarios:

- Experience AI-identified scenarios such as a product launch or a VR-based consumer feedback session.
- Simulate data collection and analysis processes using EON Interact in a virtual marketplace.

Incident Simulation:

- Engage with challenges faced during market research, like skewed data or unexpected consumer reactions.
- Develop strategies to address these incidents, enhancing the efficacy of research campaigns.

International Trade and Finance Simulations

Navigate the intricate web of international trade and finance through immersive simulations. The EON AI Assistant offers a deep dive into global markets, currency fluctuations, and trade policies, all presented through dynamic simulations.

Knowledge Portal with Floating Annotations:

- Display a hero image of a bustling international port or a stock exchange.
- 10 floating knowledge portals encompassing:
    - Basics of international trade.
    - Currency markets and exchange rates.
    - Trade barriers and policies.
    - Import and export dynamics.
    - The role of international banks.
    - Risk factors in global trade.
    - Trade agreements and treaties.
    - Analyzing global market trends.
    - Financing international trade.
    - Case studies of successful international ventures.

3-D Model Integration:

- Experience a 3-D virtual port showcasing the flow of goods and currency.
- Delve into illustrative models of cargo ships, bank vaults, and currency stacks.
- Opportunity to simulate personal trade scenarios and financial strategies in a global setting.

Annotations for the 3-D Model:

- Floating annotations detailing trade routes, currency values, and international trade protocols.
- IntelliScan feature to identify key components of trade agreements and currency notes.

Assessment Creation:

- Quizzes on international trade laws, finance mechanisms, and global market dynamics.
- Challenges to predict currency fluctuations and the impact of trade policies.

AI Generated Universal Skill Simulator:

- Engage with standard procedures in international trade and finance.
- Observe AI-generated simulations showcasing a trade deal's negotiation or a currency exchange session.
- Simulate international ventures and assess their financial viability with AI insights.

Interactive Simulation Scenarios:

- AI-driven scenarios presenting a product's journey from manufacture to international sale.
- Simulate the complexities of cross-border transactions and currency exchanges using EON Interact.

Incident Simulation:

- Address challenges like trade embargoes, currency crashes, or international trade disputes.
- Strategize and navigate these incidents, understanding their implications on global trade.

Business Strategy and Case Studies in AR

Unravel the world of business strategy through augmented reality (AR). The EON AI Assistant illuminates business concepts, strategies, and iconic case studies, allowing learners to engage with business scenarios in an interactive AR landscape.

Knowledge Portal with Floating Annotations:

- Display a hero image of a boardroom strategy session or a successful business venture.
- 10 floating knowledge portals focusing on:
    - Introduction to business strategy.
    - Key business models and frameworks.
    - Competitive advantage and differentiation.
    - SWOT and PESTLE analysis.
    - AR's influence on modern business strategies.
    - Real-world case studies of iconic companies.
    - Market segmentation and positioning.
    - Strategic alliances and mergers.
    - Long-term vs. short-term business strategies.
    - Strategies for business growth and sustainability.

3-D Model Integration:

- Engage with a 3-D AR model of a corporate headquarters, visualizing different business departments.
- Explore AR models of strategy charts, business graphs, and organizational structures.
- Opportunity to visualize personal business strategies in AR and assess their feasibility.

Annotations for the 3-D Model:

- AR annotations explaining business models, growth metrics, and strategic insights.
- IntelliScan to identify key components of successful business strategies and case studies.

Assessment Creation:

- Quizzes focused on strategic models, business ethics, and market positioning.
- Challenges to devise and present AR-based business strategies for hypothetical scenarios.

AI Generated Universal Skill Simulator:

- Engage with key strategic decisions and business operations.
- View AI-generated AR simulations of a product launch or a company's expansion plans.
- Craft business strategies in AR and receive feedback from AI on their viability and impact.

Interactive Simulation Scenarios:

- AI-driven AR scenarios like a product branding session or strategic business negotiations.
- Simulate devising and implementing business strategies in AR using EON Interact.

Incident Simulation:

- Engage with business challenges like market downturns, competitor moves, or strategic blunders.
- Craft strategies to address these challenges, optimizing business outcomes.

Tourism and Hospitality Management

Hotel Operations and Management in VR

Immerse yourself in the intricate world of hotel operations and management using EON's VR capabilities. Explore everything from front desk interactions to kitchen operations, all while navigating through a virtual hotel.

Knowledge Portal with Floating Annotations:

- Display a hero image of a grand luxury hotel lobby.
- 10 floating knowledge portals covering:
    - Introduction to hotel operations.
    - Role of front desk and guest services.
    - Housekeeping and room service intricacies.
    - Food and beverage management.
    - Safety and security protocols.
    - Hotel marketing and promotions.

- Financial operations and revenue management.
- Spa and recreational services.
- Role of technology in modern hotel operations.
- Event and conference services.

3-D Model Integration:

- Navigate a 3-D model of a luxurious hotel with all its facilities.
- Explore illustrative examples like a hotel room, the kitchen area, and the conference hall.
- Option to upload personal hotel design concepts for review and simulation.

Annotations for the 3-D Model:

- Annotations detailing hotel room amenities, kitchen equipment, and other facilities.
- IntelliScan feature highlights areas of interest within the hotel premises.

Assessment Creation:

- Quizzes focusing on hotel management theories, customer service scenarios, and safety protocols.
- Challenges where students handle virtual guest inquiries and concerns.

AI Generated Universal Skill Simulator:

- Engage in standard hotel operation routines.
- Experience AI-generated 3-D simulations of a busy hotel day, from check-ins to room service.
- Handle virtual guest interactions, with AI assessing performance.

Interactive Simulation Scenarios:

- AI-identified scenarios like handling a large group check-in or managing a wedding event.
- Simulate the coordination required for a big hotel event using EON Interact.

Incident Simulation:

- Address common hotel management incidents like overbookings or guest complaints.
- Learn strategies to resolve these challenges effectively.

Sustainable Tourism and Ecotourism

Venture into the green realm of sustainable tourism and ecotourism. With EON AI Assistant, understand the importance of responsible travel and explore eco-friendly destinations in augmented reality.

Knowledge Portal with Floating Annotations:

- Display a hero image showcasing a pristine natural destination.
- 10 floating knowledge portals delving into:
    - Introduction to sustainable tourism.
    - Principles of ecotourism.
    - Environmental impact of tourism.
    - Best practices for eco-friendly travel.
    - Role of local communities.
    - Case studies of successful ecotourism projects.
    - Eco-lodges and green accommodations.
    - Conservation and wildlife tourism.
    - Responsible tourist behavior.
    - Challenges and criticisms of ecotourism.

3-D Model Integration:

- Explore a 3-D virtual eco-lodge set in a rainforest.
- Discover illustrative examples like wildlife sanctuaries, local village setups, and nature trails.
- Option to upload personal eco-tourism concepts or destination insights.

Annotations for the 3-D Model:

- Annotations providing details on eco-friendly building materials, wildlife species, and traditional practices.
- IntelliScan to identify local flora, fauna, and culturally significant sites.

Assessment Creation:

- Quizzes on sustainable tourism concepts, environmental conservation, and community involvement.
- Challenges to design eco-friendly travel packages or create awareness campaigns.

AI Generated Universal Skill Simulator:

- Engage in virtual eco-tours guided by AI avatars.

- Experience AI-generated 3-D simulations of eco-activities, from tree planting to bird watching.
- Assess eco-tour planning skills against AI benchmarks.

Interactive Simulation Scenarios:

- AI-driven scenarios like managing an eco-resort or guiding a wildlife safari.
- Plan sustainable activities using EON Interact and assess their impact.

Incident Simulation:

- Address challenges like mitigating tourist impact on fragile ecosystems or handling community conflicts.
- Strategize for eco-friendly solutions and learn from real-world examples.

Event Planning and Management in AR

Dive into the dynamic world of event planning and management, enhanced with augmented reality. From venue selection to guest interactions, get hands-on experience in organizing virtual events with the EON AI Assistant.

Knowledge Portal with Floating Annotations:

- Display a hero image of a grand event setup.
- 10 floating knowledge portals discussing:
    - Basics of event planning.
    - Role of technology in modern events.
    - Venue selection and setup.
    - Catering and entertainment considerations.
    - Guest management and interactions.
    - Budgeting and financial aspects.
    - Marketing and promotions for events.
    - Navigating event challenges.
    - Impact assessment and feedback.
    - Trends in virtual and hybrid events.

3-D Model Integration:

- Visualize a 3-D model of a grand ballroom or outdoor event space.
- Explore AR examples like stage setups, lighting arrangements, and interactive booths.
- Option to upload personal event design concepts and visualize them in AR.

Annotations for the 3-D Model:

- AR annotations explaining seating arrangements, technical setups, and event flow.
- IntelliScan feature to visualize different event themes and decorations.

Assessment Creation:

- Quizzes on event management principles, guest handling, and technology tools.
- AR challenges where students design event layouts or manage virtual guest interactions.

AI Generated Universal Skill Simulator:

- Engage in the various stages of event management through AR simulations.
- Experience AI-guided walkthroughs of event day preparations, execution, and post-event tasks.
- Assess event coordination skills in AR scenarios, with feedback from AI.

Interactive Simulation Scenarios:

- AI-identified AR scenarios like managing a concert, corporate seminar, or a wedding.
- Design and execute these events using EON Interact, experiencing them in AR.

Incident Simulation:

- Address common event-related challenges like technical glitches, guest issues, or logistical delays.
- Learn to adapt and overcome these challenges in augmented reality simulations.

Faculty of Medicine

Medicine and Medical Technology

Human Anatomy and Physiology in VR

Delve into the intricacies of human anatomy and physiology using the cutting-edge virtual reality tools of the EON AI Assistant. From cellular structures to the interplay of body systems, experience an immersive exploration of the human body.

Knowledge Portal with Floating Annotations:

- Display a hero image showcasing a detailed human anatomical model.
- 10 floating knowledge portals that delve into:
    - Overview of human anatomy.
    - Cellular structures and functions.
    - Musculoskeletal system.
    - Cardiovascular system.
    - Nervous system and brain.
    - Respiratory system.
    - Digestive system.
    - Endocrine system.
    - Reproductive system.
    - Integumentary system (skin, hair, nails).

3-D Model Integration:

- Engage with a 3-D virtual human body, allowing interactive exploration of organs and systems.
- Explore specific models like the heart, brain, and skeletal structures.
- Opportunity to upload and visualize custom 3-D medical scans.

Annotations for the 3-D Model:

- Detailed annotations explaining each body part, its function, and its relation to other structures.
- IntelliScan feature identifies and explains various body components interactively.

Assessment Creation:

- Quizzes on anatomical structures, physiological processes, and body system functions.
- Challenges in identifying and explaining specific organs, tissues, and cells.

AI Generated Universal Skill Simulator:

- Interact with standard physiological processes and mechanisms.
- Experience AI-generated 3-D animations illustrating processes like blood circulation, neural signaling, or digestion.
- Test and enhance your understanding of anatomy with virtual dissections and interactive demonstrations.

Interactive Simulation Scenarios:

- AI scenarios of physiological responses, like adrenaline rush or the body's response to cold.
- Simulate the workings of different body systems under varied conditions using EON Interact.

Incident Simulation:

- Encounter and address medical incidents like injuries, infections, or abnormal physiological reactions.
- Engage with potential medical solutions and interventions.

Diagnostic Imaging and Radiology Simulations

Master the realm of diagnostic imaging and radiology through advanced simulations offered by EON AI Assistant. Understand imaging modalities, interpret radiographs, and enhance your diagnostic skills in a virtual setting.

Knowledge Portal with Floating Annotations:

- Feature a hero image of an X-ray or MRI scan.
- 10 floating knowledge portals encompassing:
    - Basics of diagnostic imaging.
    - X-rays and their applications.
    - Magnetic Resonance Imaging (MRI).
    - Computed Tomography (CT) scans.
    - Ultrasound imaging.
    - Positron Emission Tomography (PET) scans.
    - Radiographic anatomy.
    - Contrast agents in imaging.
    - Safety and ethics in radiology.
    - Future trends in diagnostic imaging.

3-D Model Integration:

- Experience 3-D virtual radiology equipment and visualize the inner workings of imaging machines.
- Examine illustrative scans from various imaging modalities.
- Option to upload and interpret personal diagnostic images in a 3-D environment.

Annotations for the 3-D Model:

- Annotations detailing the parts of imaging machines, the science behind each imaging modality, and the interpretation of scans.
- IntelliScan aids in identifying abnormalities or points of interest in provided scans.

Assessment Creation:

- Quizzes on imaging techniques, radiological safety, and scan interpretation.
- Challenges to interpret real diagnostic images, detecting and diagnosing potential medical conditions.

AI Generated Universal Skill Simulator:

- Engage with standard radiological procedures, from patient positioning to image acquisition.
- AI-driven 3-D animations showcase the process of obtaining and interpreting different types of scans.
- Enhance diagnostic skills through interactive image reading sessions.

Interactive Simulation Scenarios:

- AI-driven scenarios demonstrating emergency radiological cases or complex imaging situations.
- Practice imaging techniques and interpretations using EON Interact in varied clinical scenarios.

Incident Simulation:

- Address incidents like imaging artifacts, patient reactions to contrast agents, or equipment malfunctions.
- Strategize and determine the best radiological approach to unique clinical challenges.

Medical Procedures and Surgery in AR

Step into the world of medical procedures and surgery through augmented reality with the EON AI Assistant. From minor procedures to major surgeries, gain hands-on experience in a risk-free, virtual environment.

Knowledge Portal with Floating Annotations:

- Feature a hero image of a surgical theater or medical instruments.

- 10 floating knowledge portals covering:
    - Overview of surgical procedures.
    - Sterilization and surgical safety.
    - Minor medical procedures.
    - Major surgical operations.
    - Post-operative care.
    - Anesthesia and pain management.
    - Surgical tools and their uses.
    - Robotic surgeries and their advantages.
    - Surgical complications and their management.
    - Future trends in surgical techniques.

3-D Model Integration:

- Engage with 3-D virtual surgical theaters, detailed organ models, and a plethora of medical tools.
- Explore surgeries on virtual patients, understanding each step of the procedure.
- Opportunity to upload and visualize 3-D reconstructions of specific surgical cases.

Annotations for the 3-D Model:

- Annotations providing insights into surgical techniques, tool functionalities, and organ anatomy.
- IntelliScan offers detailed views of surgical sites, enhancing understanding and precision.

Assessment Creation:

- Quizzes on surgical methods, tool identification, and post-operative care.
- Challenges in simulating surgical procedures and determining the best intervention for given cases.

AI Generated Universal Skill Simulator:

- Engage with standard medical procedures and surgeries.
- AI-created 3-D animations showcase various surgeries, from appendectomies to heart bypasses.
- Practice and enhance surgical skills through step-by-step procedural demonstrations in AR.

Interactive Simulation Scenarios:

- AI scenarios illustrating surgical emergencies or unique procedural challenges.

- Simulate intricate surgeries or medical interventions using EON Interact, enhancing surgical proficiency.

Incident Simulation:

- Address surgical complications like bleeding, tissue damage, or unexpected findings.
- Strategize and determine the best approach to manage and resolve surgical challenges in AR.

Aerospace Engineering Institute

Aerospace and Aeronautics

Aerodynamics and Flight Mechanics in VR

Journey through the realm of aerodynamics and flight mechanics using immersive VR experiences. Explore the principles of flight, engage with virtual wind tunnels, and understand the dynamics behind every aircraft movement.

Knowledge Portal with Floating Annotations:

- Display a hero image of an aircraft in mid-flight.
- 10 floating knowledge portals that elucidate:
    - Fundamentals of aerodynamics.
    - Lift, drag, and thrust principles.
    - Bernoulli's theorem and its application in flight.
    - Wing and aerofoil designs.
    - Stability and control in flight mechanics.
    - Maneuverability and flight paths.
    - High-speed and low-speed aerodynamics.
    - Wind tunnels and their significance.
    - Vortices and boundary layer theory.
    - Flight simulations and their accuracy.

3-D Model Integration:

- Experience a 3-D rendition of different aircraft, showcasing variations in design.

- Explore illustrative models of wind tunnels, jet streams, and various aircraft components.
- Option to upload aerodynamic designs and simulate their flight paths in VR.

Annotations for the 3-D Model:

- Floating annotations illustrating aircraft components, airflows, and pressure differences.
- IntelliScan feature to identify different aerodynamic shapes and their effects on flight.

Assessment Creation:

- Quizzes on aerodynamic theories, flight patterns, and aircraft stability.
- Tasks that challenge students to predict flight behaviors based on aerodynamic principles.

AI Generated Universal Skill Simulator:

- Engage with the standard aerodynamic tests and flight simulations.
- AI-driven 3-D animations showcasing flight maneuvers, aerodynamic forces, and wind tunnel tests.
- Demonstrate understanding of flight mechanics, with AI evaluating comprehension and application.

Interactive Simulation Scenarios:

- AI-identified scenarios such as wind tunnel tests, aerodynamic design brainstorming, and flight pattern analysis.
- Engage with virtual aircrafts and observe their responses to various atmospheric conditions using EON Interact.

Incident Simulation:

- Address challenges in aerodynamics like turbulent flows, unexpected drag, or stalling.
- Strategize and resolve, gaining insights into the nuances of flight mechanics.

Aircraft Design and Systems

Embark on an enlightening voyage into the intricate world of aircraft design and systems. Dive deep into structural mechanics, power systems, and the integration of components that make flight possible.

Knowledge Portal with Floating Annotations:

- Display a hero image of aircraft blueprints or a CAD design.
- 10 floating knowledge portals elaborating on:
    - History of aircraft design.
    - Structural mechanics and material choices.
    - Propulsion and power systems.
    - Landing gear and undercarriage design.
    - Hydraulic and pneumatic systems.
    - Avionic systems integration.
    - Fuel systems and distribution.
    - Weight distribution and balance.
    - Safety systems and redundancies.
    - Future trends in aircraft design.

3-D Model Integration:

- Explore a 3-D aircraft, dissecting it to understand individual components.
- Models of engines, landing gear, cockpits, and other intricate components.
- Opportunity to upload personal aircraft designs for a virtual exploration.

Annotations for the 3-D Model:

- Annotations detailing the specifics of design choices, materials, and system integrations.
- IntelliScan offering insights into the inner workings of advanced systems within aircraft.

Assessment Creation:

- Quizzes focusing on design principles, system functionalities, and the history of aircraft evolution.
- Challenges that ask students to design solutions for specific flight requirements.

AI Generated Universal Skill Simulator:

- Deep dive into standard processes of aircraft system checks and design evaluations.

- AI-guided 3-D animations illustrating the integration of various systems within an aircraft.
- Practice designing and troubleshooting aircraft systems with real-time AI feedback.

Interactive Simulation Scenarios:

- Experience AI-identified scenarios such as a design brainstorming session, system integration challenges, or safety system evaluations.
- Prototype new aircraft designs or systems using EON Interact.

Incident Simulation:

- Confront real-life challenges in aircraft design, like system failures or structural vulnerabilities.
- Learn and implement best practices in design and system integration.

Avionics and Control Systems in AR

Dive into the cutting-edge domain of avionics and control systems using augmented reality. Understand the intricate electronics, controls, and systems that guide modern aircraft, all visualized in real-time AR.

Knowledge Portal with Floating Annotations:

- Hero image showcasing a cockpit laden with avionic instruments.
- 10 floating knowledge portals covering:
    - Introduction to avionics.
    - Flight control systems and autopilot functionalities.
    - Navigation and communication systems.
    - Display systems and electronic flight instrument systems (EFIS).
    - Aircraft sensors and detectors.
    - Data buses and avionic architectures.
    - Traffic and weather radar systems.
    - Emergency systems and backups.
    - Future of avionics: AI and automation.
    - Maintenance and updates in avionic systems.

3-D Model Integration:

- Immerse in a 3-D cockpit, exploring the various avionic instruments and controls.
- Delve into models of avionic circuits, control panels, and system integrations.

- Integrate personal avionic designs for a hands-on AR experience.

Annotations for the 3-D Model:

- Annotations providing insights into avionic instruments, their purposes, and functionalities.
- IntelliScan highlighting the interactions between various avionic components.

Assessment Creation:

- Quizzes on avionic principles, control systems, and communication protocols.
- Tasks to troubleshoot avionic errors or predict system behaviors.

AI Generated Universal Skill Simulator:

- Engage with typical avionic tests and control calibrations.
- AI-driven 3-D animations of avionic workflows, system checks, and emergency protocols.
- Simulate avionic adjustments, getting AI insights on system optimizations.

Interactive Simulation Scenarios:

- AI-driven scenarios like avionic system integration, flight path calculations, or communication checks.
- Design and test new avionic interfaces using EON Interact.

Incident Simulation:

- Address challenges in avionics such as system failures, communication breakdowns, or navigation errors.
- Strategically overcome these challenges, understanding the criticality of avionic systems.

Graduate School of Applied Statistics

Statistics and Data Science

Predictive Modeling and Regression in VR

Dive into the world of predictive modeling and regression analysis with the EON AI Assistant in Virtual Reality. Explore complex data sets, analyze trends, and predict future outcomes through an immersive and interactive learning experience.

Knowledge Portal with Floating Annotations:

- Hero image showcasing a 3D regression curve and data plots.
- 10 floating knowledge portals focusing on:
  - Basics of predictive modeling.
  - Introduction to regression analysis.
  - Different types of regression models.
  - Understanding variables and coefficients.
  - Model validation techniques.
  - Case studies of successful predictive models.
  - Overfitting and underfitting in models.
  - Cross-validation techniques.
  - The role of residuals in regression.
  - Predictive modeling in industry settings.

3-D Model Integration:

- Interact with 3-D plots of regression models, showing various data points.
- Explore 3-D visualization of multi-variable regression, logistic regression, and polynomial regression.
- Upload personal data sets to visualize in a 3-D regression environment.

Annotations for the 3-D Model:

- Annotations explaining regression lines, variable importance, and residual plots.
- IntelliScan feature highlighting key points in the data and the significance of regression coefficients.

Assessment Creation:

- Quizzes on regression types, prediction accuracy, and model evaluation.
- Challenges to predict outcomes based on given data using regression models.

AI Generated Universal Skill Simulator:

- Engage with standard procedures in building and validating regression models.
- Watch AI-generated 3-D simulations showing the impact of different variables on the regression outcome.
- Practice building regression models and receive AI feedback on accuracy and precision.

Interactive Simulation Scenarios:

- AI-driven scenarios like building a predictive model for a marketing campaign or predicting sales.
- Simulate real-world challenges in predictive modeling using VR.

Incident Simulation:

- Address common pitfalls in regression analysis such as multicollinearity or heteroscedasticity.
- Resolve these issues using best practices and strategies in predictive modeling.

Time Series Analysis and Forecasting

Explore the intricacies of time series analysis and delve deep into forecasting techniques using EON AI Assistant. Understand patterns, predict future trends, and make data-driven decisions through this immersive learning experience.

Knowledge Portal with Floating Annotations:

- Hero image of a time series graph showcasing historical data and future forecasts.
- 10 floating knowledge portals addressing:
    - Introduction to time series analysis.
    - Seasonality and trends in data.
    - Autocorrelation and partial autocorrelation.
    - Moving averages and smoothing techniques.
    - ARIMA and its components.
    - Forecasting techniques and accuracy measures.
    - External regressors in time series.
    - Decomposition of time series data.
    - Real-world applications of time series forecasting.
    - Challenges in time series prediction.

3-D Model Integration:

- Visualize time series data in 3-D, showcasing peaks, troughs, and cyclical patterns.
- Explore 3-D models of ARIMA components, moving averages, and other time series tools.
- Upload personal time series data for 3-D visualization and analysis.

Annotations for the 3-D Model:

- Floating annotations explaining time series components, lags, and forecasting principles.
- IntelliScan feature to identify seasonality, trends, and cycles in data.

Assessment Creation:

- Quizzes on time series decomposition, forecasting methods, and prediction accuracy.
- Practical challenges in predicting future data points based on historical time series.

AI Generated Universal Skill Simulator:

- Engage with the process of analyzing time series data and building forecasts.
- View AI-generated simulations showing how different factors impact time series predictions.
- Test and validate forecasting models with AI feedback.

Interactive Simulation Scenarios:

- AI scenarios focusing on predicting stock prices, weather forecasting, or sales trends.
- Engage in real-world challenges of time series forecasting in a virtual environment.

Incident Simulation:

- Tackle common challenges like non-stationary data or unexpected outliers in time series.
- Use best practices to resolve and adjust forecasts accordingly.

Statistical Software and Programming in AR

Step into the realm of statistical software and programming using Augmented Reality with the EON AI Assistant. Engage with statistical tools, write code, and perform analyses in an interactive and augmented environment.

Knowledge Portal with Floating Annotations:

- Hero image showcasing a virtual AR statistical workspace.
- 10 floating knowledge portals covering:
    - Basics of statistical programming.
    - Introduction to popular statistical software.
    - Data manipulation and cleaning techniques.
    - Scripting for statistical analysis.
    - Visualization tools in statistical software.
    - Regression, clustering, and classification in code.
    - Debugging and optimization techniques.
    - Extensions and plugins for enhanced analysis.
    - Real-world applications of statistical software.
    - Future trends in statistical programming.

3-D Model Integration:

- Interact with 3-D interfaces of statistical software like RStudio, Python Jupyter Notebooks, and SPSS.
- Visualize code execution, data transformations, and statistical outputs in 3-D.
- Import personal code or data for AR analysis and debugging.

Annotations for the 3-D Model:

- Annotations explaining code snippets, software tools, and statistical outputs.
- IntelliScan to identify code errors, optimization opportunities, or data insights.

Assessment Creation:

- Quizzes on software functionalities, coding techniques, and statistical results.
- Code challenges where students write and test statistical scripts in AR.

AI Generated Universal Skill Simulator:

- Dive into standard procedures of statistical programming and analysis.
- View AI simulations illustrating the execution of statistical tests, data manipulations, and visualizations.
- Write and test code snippets in AR with AI guidance and feedback.

Interactive Simulation Scenarios:

- AI scenarios like data analysis for a research project, statistical modeling, or machine learning implementation.
- Engage in real-world coding challenges in an augmented reality workspace.

Incident Simulation:

- Address common issues in statistical programming like code bugs, software crashes, or incorrect analysis.
- Use best practices to debug, optimize, and ensure accurate statistical results.

The Joint Graduate School of Energy and Environment

Energy and Environmental Science

Renewable Energy Technologies in VR

Immerse yourself in the futuristic world of renewable energy through virtual reality. Grasp the workings of wind turbines, solar panels, and hydropower plants, and visualize a sustainable future powered by clean energy.

Knowledge Portal with Floating Annotations:

- Display a hero image representing an array of renewable energy sources.
- 10 floating knowledge portals diving into:
    - Introduction to renewable energy.
    - Solar energy and photovoltaic cells.
    - Wind energy and turbine technology.
    - Hydropower and tidal energy dynamics.
    - Geothermal energy sources.
    - Biomass and bioenergy processes.
    - Energy storage solutions.
    - Advancements in renewable tech.
    - Global impact and benefits.
    - Future prospects of renewables.

3-D Model Integration:

- Explore a 3-D virtual renewable energy park, encompassing wind farms, solar fields, and hydropower facilities.
- Illustrative examples like wind turbines in motion or solar cells absorbing sunlight.
- Option to simulate personal renewable projects or design renewable infrastructures.

Annotations for the 3-D Model:

- Detailed annotations explaining the mechanics of turbines, efficiency of solar cells, and dynamics of water turbines.
- IntelliScan feature identifying energy outputs, materials used, and renewable innovations.

Assessment Creation:

- Quizzes focused on renewable energy principles, tech advancements, and global implications.
- Challenges to design renewable energy solutions for virtual cities or communities.

AI Generated Universal Skill Simulator:

- Engage with the installation, maintenance, and optimization of renewable tech.
- AI-driven 3-D animations showcasing the transformation of natural resources into usable energy.
- Demonstrate knowledge of renewable setups and get assessed on optimization strategies.

Interactive Simulation Scenarios:

- AI-created scenarios like solar farm installations or wind turbine maintenance.
- Design and implement renewable projects using EON Interact, balancing efficiency and sustainability.

Incident Simulation:

- Navigate challenges like reduced solar intake on cloudy days or turbine malfunctions.
- Strategize solutions and enhance renewable output through hands-on simulations.

Climate Change and Mitigation Strategies

Dive deep into the pressing issue of climate change and understand its global implications. Explore mitigation strategies in VR, from reforestation to green tech innovations, and envision a world taking steps toward healing.

Knowledge Portal with Floating Annotations:

- Hero image depicting contrasting climates – from melting glaciers to scorching deserts.
- 10 floating portals covering:
    - Understanding climate change.
    - Causes and effects.
    - Greenhouse gases and their impact.
    - Sea level rise and its consequences.
    - Ecosystem disruption and species endangerment.
    - Climate change policies and accords.
    - Mitigation strategies.
    - Role of technology in climate solutions.
    - Reforestation and carbon sequestration.
    - Community and individual efforts.

3-D Model Integration:

- Explore a virtual Earth undergoing climate changes, from pole melting to desertification.
- Illustrative models like deforestation zones, sustainable cities, and green tech innovations.
- Design and simulate climate action projects in diverse virtual environments.

Annotations for the 3-D Model:

- Annotations explaining atmospheric changes, greenhouse effect, and mitigation technologies.
- IntelliScan feature highlighting regions most affected and potential zones for climate action.

Assessment Creation:

- Quizzes on global warming, climate science, and mitigation strategies.
- Challenges to design sustainable cities or propose climate action plans.

AI Generated Universal Skill Simulator:

- Engage with mitigation processes like reforestation, carbon capture, and green infrastructure planning.
- AI-driven simulations visualizing the before and after effects of climate actions.
- Propose and test mitigation solutions, receiving AI assessments on their feasibility and impact.

Interactive Simulation Scenarios:

- AI scenarios such as reforesting a denuded area or setting up carbon capture facilities.
- Implement and manage climate action projects using EON Interact, evaluating their long-term benefits.

Incident Simulation:

- Handle challenges like unexpected droughts, forest fires, or flood events.
- Strategize solutions, prioritize community safety, and restore ecological balance through simulations.

Water Resources and Conservation in AR

Navigate the world of water resources and conservation through augmented reality. Understand the value of freshwater, explore aquifers and reservoirs, and learn about cutting-edge conservation techniques.

Knowledge Portal with Floating Annotations:

- Hero image showcasing pristine water bodies and contrasting them with drought-stricken areas.
- 10 floating knowledge portals focusing on:
    - Importance of freshwater.
    - Global water distribution.
    - Aquifers and groundwater resources.
    - Water treatment and purification.
    - Irrigation and agriculture's water footprint.
    - Urban water management.
    - Water conservation techniques.
    - Rainwater harvesting.
    - Role of technology in water management.
    - Watershed protection and restoration.

3-D Model Integration:

- Dive into a 3-D augmented reality water cycle, observing evaporation, condensation, and precipitation.
- Explore models like intricate aquifer systems, reservoir designs, and water treatment facilities.
- Implement personal water conservation projects or design water management systems.

Annotations for the 3-D Model:

- Annotations detailing water purification stages, aquifer layers, and conservation techniques.
- IntelliScan highlighting water scarcity regions and potential zones for water conservation.

Assessment Creation:

- Quizzes about the water cycle, global water resources, and conservation methods.
- Challenges to design sustainable water systems or propose water-saving solutions.

AI Generated Universal Skill Simulator:

- Interact with processes like water treatment, rainwater harvesting, and aquifer replenishment.
- AI simulations illustrating water conservation in action, from household methods to community projects.
- Design and test water-saving solutions, receiving AI feedback on their efficiency.

Interactive Simulation Scenarios:

- AI-created scenarios like setting up a community rainwater harvesting system or restoring a local pond.
- Plan and execute water conservation initiatives using EON Interact, ensuring sustainability and effectiveness.

Incident Simulation:

- Address challenges like depleting aquifers, water contamination, or urban flooding.
- Devise solutions, prioritize community well-being, and establish water conservation measures through simulations.

Faculty of Law

Law and Jurisprudence

Criminal Law and Procedure Simulations

Step into the intricate realm of criminal law and procedure with the EON AI Assistant. Experience real-life court scenarios, understand legal precedents, and explore the justice system, all brought to life in dynamic simulations.

Knowledge Portal with Floating Annotations:

- Hero image depicting a courtroom in session.
- 10 floating knowledge portals covering:
    - Introduction to criminal law.
    - Major criminal law statutes.
    - Procedure of a criminal trial.
    - Role and responsibilities of the judiciary.
    - Defendant's rights.
    - Prosecution and defense strategies.
    - Evidence collection and analysis.
    - Case studies of landmark judgments.
    - Role of juries in trials.
    - Sentencing and appeals.

3-D Model Integration:

- Delve into a 3-D model of a courtroom, prison cell, and police investigation rooms.
- Discover illustrative examples like the judge's gavel, handcuffs, and legal documents.
- Upload personal case studies for a virtual walkthrough of their proceedings.

Annotations for the 3-D Model:

- Floating annotations detailing courtroom roles, prison regulations, and investigation procedures.
- IntelliScan feature highlighting major legal statutes and key evidence types.

Assessment Creation:

- Quizzes focusing on criminal laws, courtroom procedures, and legal terminologies.
- Challenges involving the identification of legal instruments or analyzing fictional case files.

AI Generated Universal Skill Simulator:

- Engage with standard courtroom proceedings.
- AI-generated 3-D animations replicating court sessions, cross-examinations, and jury deliberations.
- Enact a defense or prosecution strategy with AI feedback on legal soundness.

Interactive Simulation Scenarios:

- AI-identified scenarios like a courtroom cross-examination, jail visit, or a police investigation.
- Engage in mock trials using EON Interact.

Incident Simulation:

- Address challenges like mistrials, tampered evidence, or rights violations.
- Strategize legal solutions for these incidents.

International Law and Human Rights in VR

Journey through the global framework of international law and human rights using EON AI Assistant. Experience landmark cases, international treaties, and human rights scenarios in immersive virtual reality.

Knowledge Portal with Floating Annotations:

- Hero image showcasing the United Nations General Assembly.
- 10 floating knowledge portals detailing:
    - Basics of international law.
    - Key international treaties and conventions.
    - Introduction to human rights.
    - Genocides and war crimes.
    - International Court of Justice (ICJ).
    - Rights of refugees and immigrants.
    - Environmental rights and international norms.
    - Trade laws and international economy.
    - Territorial disputes and resolutions.

- International humanitarian law.

3-D Model Integration:

- Explore a 3-D model of the ICJ, refugee camps, and UN sessions.
- Illustrative models include the UN Charter, gavels, and international treaty documents.
- Upload personal research on international issues for a VR walkthrough.

Annotations for the 3-D Model:

- Annotations elaborating on court procedures, refugee rights, and treaty clauses.
- IntelliScan spotlighting major international events and human rights milestones.

Assessment Creation:

- Quizzes on international treaties, human rights, and global conflicts.
- Challenges involving the interpretation of international laws or rights violations incidents.

AI Generated Universal Skill Simulator:

- Engage with diplomatic negotiations and treaty signings.
- AI-generated VR recreations of human rights protests, peace treaties, and international court hearings.
- Participate in a UN session, advocating for rights issues and receiving AI feedback.

Interactive Simulation Scenarios:

- AI-driven scenarios such as an international arbitration or a human rights council session.
- Simulate diplomatic negotiations or rights advocacy using EON Interact.

Incident Simulation:

- Handle incidents like treaty breaches, rights violations, or international conflicts.
- Formulate diplomatic resolutions and legal strategies.

Property Law and Real Estate in AR

Navigate the complex domain of property law and real estate with the augmented assistance of EON AI. Explore property rights, delve into real estate transactions, and understand land use regulations in augmented reality.

Knowledge Portal with Floating Annotations:

- Hero image of a beautiful property or a bustling real estate office.
- 10 floating knowledge portals that delve into:
    - Basics of property law.
    - Real estate transactions and contracts.
    - Mortgage and financing.
    - Land use regulations and zoning.
    - Tenancy laws and rights.
    - Intellectual property.
    - Case studies of property disputes.
    - Environmental considerations in property.
    - Property taxation.
    - Real estate market trends.

3-D Model Integration:

- Immerse in a 3-D AR model of properties, real estate offices, and land parcels.
- Illustrative models like property deeds, mortgage agreements, and architectural blueprints.
- Integrate personal property portfolios for an AR analysis.

Annotations for the 3-D Model:

- Annotations explaining property types, real estate procedures, and land use codes.
- IntelliScan focusing on property contracts, land demarcations, and market data.

Assessment Creation:

- Quizzes on property rights, real estate market analysis, and land use regulations.
- Challenges that ask learners to evaluate property contracts or appraise real estate values.

AI Generated Universal Skill Simulator:

- Engage in real estate transactions, property auctions, and land use planning.

- AR simulations showcasing property inspections, contract signings, and zoning meetings.
- Simulate a real estate deal and get AI-driven feedback on negotiation tactics.

Interactive Simulation Scenarios:

- AI-presented scenarios of property auctions, tenant disputes, or zoning board meetings.
- Engage in property negotiations or dispute resolutions using EON Interact.

Incident Simulation:

- Address common property disputes, zoning violations, or mortgage defaults.
- Strategize legal and business solutions for these incidents.

Faculty of Liberal Arts and Science

Languages and Humanities

Thai Language and Literature in VR

Immerse yourself in the rich tapestry of Thai language and literature using Virtual Reality. Journey through Thailand's literary history, learn its language nuances, and interact with virtual natives for a holistic experience.

Knowledge Portal with Floating Annotations:

- **Hero Image**: Virtual Bangkok with the Chao Phraya river in the backdrop.
- **10 Floating Knowledge Portals** that include:
    - Images of famous Thai authors and their works.
    - Text detailing the evolution of the Thai language.
    - Videos of poetry readings and dramatic performances.
    - An AI Avatar guiding users through Thai phonetics and grammar.

3-D Model Integration:

- **Models**: Virtual Thai temples, manuscripts, and traditional literature settings.
- **Illustrative Example**: A 3-D model of the Ramakien, Thailand's national epic.
- **Editing Option**: Explore different Thai scripts and fonts.
- **Personal Integration**: Import your own Thai writing or voice recordings.

Annotations for the 3-D Model:

- Annotations explaining Thai script, phonetics, and key literary themes.
- IntelliScan to interpret various Thai literary works.
- Manual annotation addition for personal insights.

Automatic Assessment Creation:

- Quizzes on Thai phonetics, famous literary works, and history.
- Identify and pronounce specific Thai words or phrases.

AI Generated Universal Skill Simulator:

- Simulation of Thai pronunciation exercises.
- Demonstrations of Thai poetry and prose readings.

Interactive Simulation Scenarios:

- Real-life scenarios of conversing with Thai locals.
- Manual simulation creation for Thai language practice.

Incident Simulation:

- Handling linguistic challenges when conversing in Thai.
- Strategies for understanding colloquialisms and regional dialects.

Western Philosophy and Thought

Explore the foundational thoughts and ideas of Western philosophy in an immersive environment. Engage with the teachings of famous philosophers, ponder on existential questions, and dive deep into the evolution of Western thought.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A virtual representation of the School of Athens.
- **10 Floating Knowledge Portals** that include:
  - Images of iconic Western philosophers.
  - Text detailing the chronology of Western thought.
  - Videos of philosophical debates and discourses.
  - An AI Avatar guiding users through philosophical ideologies and doctrines.

3-D Model Integration:

- **Models**: Virtual Greek and Roman forums, libraries, and philosophical gatherings.
- **Illustrative Example**: A 3-D model of Plato's Academy.
- **Editing Option**: Engage with different philosophical treatises and texts.
- **Personal Integration**: Import your own philosophical writings or discourses.

Annotations for the 3-D Model:

- Annotations elucidating philosophical doctrines and theories.
- IntelliScan to dive deep into Western philosophical works.
- Option for personal annotations on philosophical topics.

Automatic Assessment Creation:

- Quizzes on major Western philosophers, their doctrines, and contributions.
- Identify and explain different philosophical thought processes.

AI Generated Universal Skill Simulator:

- Simulated philosophical debates.
- Demonstrations of Socratic questioning.

Interactive Simulation Scenarios:

- Real-life scenarios of philosophical dilemmas and debates.
- Manual creation of philosophical scenarios for introspection.

Incident Simulation:

- Handling debates on contentious philosophical topics.
- Strategies for navigating philosophical paradoxes.

Asian Cultures and Civilizations in AR

Experience the diverse and rich cultures of Asia in Augmented Reality. Explore ancient civilizations, their art, architecture, and traditions, right in the comfort of your space.

Knowledge Portal with Floating Annotations:

- **Hero Image**: Panorama of the Great Wall of China, Taj Mahal, and Angkor Wat.
- **10 Floating Knowledge Portals** that include:
    - Images from significant Asian cultural events and landmarks.

- Text on the history and evolution of Asian civilizations.
- Videos showcasing traditional dances, music, and ceremonies.
- An AI Avatar taking learners through Asian festivals and traditions.

3-D Model Integration:

- Models: Augmented relics, monuments, and traditional artifacts.
- Illustrative Example: A 3-D model of a Japanese tea ceremony setup.
- Editing Option: Interact with different Asian artifacts and symbols.
- Personal Integration: Integrate your own cultural memories or experiences.

Annotations for the 3-D Model:

- Annotations detailing various Asian cultural symbols and their significance.
- IntelliScan for understanding the history behind ancient relics.
- Add personal insights on specific Asian traditions.

Automatic Assessment Creation:

- Quizzes on major Asian civilizations, their history, and cultural practices.
- Identify and describe significant Asian cultural artifacts.

AI Generated Universal Skill Simulator:

- Simulations of traditional Asian ceremonies and festivals.
- Demonstrations of traditional dances, music, and crafts.

Interactive Simulation Scenarios:

- Real-life scenarios such as celebrating Diwali in India or the Lunar New Year in China.
- Create your own cultural scenarios based on Asian traditions.

Incident Simulation:

- Navigating cultural nuances during significant Asian ceremonies.
- Strategies for understanding and respecting diverse Asian traditions.

Nanotechnology College

Applied Nanotechnology

Introduction to Nanoscale Science in VR

Step into the microscopic world of nanoscale science through immersive VR experiences with the EON AI Assistant. Discover the fundamental principles and marvel at the unseen nanostructures that shape our world.

Knowledge Portal with Floating Annotations:

- Hero image of atoms, molecules, and nanoscale structures.
- 10 floating knowledge portals elucidating:
    - Basics of nanoscale science.
    - Importance of nanotechnology.
    - Atomic and molecular structures.
    - Forces at the nanoscale.
    - Tools used in nanoscience.
    - Real-world applications of nanotechnology.
    - The future of nanoscale advancements.
    - Nanostructures in nature.
    - Importance of scale and measurement.
    - Ethical considerations in nanoscience.

3-D Model Integration:

- Explore a 3-D model of a nanolab, showcasing tools and equipment.
- Illustrative models of nanoparticles, molecular structures, and atomic arrangements.
- Opportunity to visualize and interact with intricate nanostructures in VR.

Annotations for the 3-D Model:

- Detailed annotations on nano tools, particle behaviors, and atomic arrangements.
- IntelliScan feature identifying and explaining nanoscale phenomena.

Assessment Creation:

- Quizzes testing understanding of basic concepts, tools, and applications.

- Interactive challenges on nanoscale phenomena interpretation and real-world applications.

AI Generated Universal Skill Simulator:

- Understand standard processes and methodologies in nanoscale science.
- AI-created 3-D animations depicting the interactions at the nanoscale.
- Explore and learn about the behavior and properties of materials at the nanoscale.

Interactive Simulation Scenarios:

- AI-created scenarios showcasing nanofabrication processes or nanoparticle interactions.
- Simulate nanoscale experiments and interactions using EON Interact.

Incident Simulation:

- Address challenges faced during nanoscale research or application.
- Engage in problem-solving scenarios to overcome these nano challenges.

Nanomaterial Synthesis and Characterization

Delve into the fascinating process of nanomaterial synthesis and characterization, using the EON AI Assistant. Understand the techniques, tools, and methodologies that bring nanomaterials to life.

Knowledge Portal with Floating Annotations:

- Hero image of synthesized nanomaterials under a microscope.
- 10 floating knowledge portals featuring:
    - Introduction to nanomaterials.
    - Various synthesis methods.
    - Tools used in nanomaterial characterization.
    - Understanding material properties at the nanoscale.
    - Applications of synthesized nanomaterials.
    - Challenges in nanomaterial synthesis.
    - Purity and yield considerations.
    - Safety protocols in nanosynthesis.
    - Advanced characterization techniques.
    - Future trends in nanomaterial research.

3-D Model Integration:

- Experience a 3-D nanosynthesis lab, showcasing reactors, analyzers, and tools.
- Illustrative models of nanomaterials at different stages of synthesis.
- Engage with complex nanomaterial structures and observe their properties.

Annotations for the 3-D Model:

- Annotations detailing synthesis equipment, material properties, and characterization techniques.
- IntelliScan feature showcasing the nuances of nanomaterial structures.

Assessment Creation:

- Quizzes on synthesis techniques, characterization tools, and nanomaterial properties.
- Challenges to identify materials based on their nano properties and synthesis results.

AI Generated Universal Skill Simulator:

- Engage with standard nanomaterial synthesis and characterization procedures.
- AI-created 3-D animations detailing the synthesis process from raw materials to final nanoproducts.
- Simulate nanomaterial synthesis reactions and characterization processes.

Interactive Simulation Scenarios:

- AI-constructed scenarios focusing on laboratory experiments and nanomaterial testing.
- Conduct synthesis reactions and characterize materials using EON Interact.

Incident Simulation:

- Encounter challenges during synthesis, like impurities or unexpected reactions.
- Strategize to resolve these issues and ensure optimal nanomaterial synthesis.

Nano-biotechnology and Medical Applications in AR

Experience the convergence of nanotechnology and biomedicine in augmented reality with the EON AI Assistant. Explore the transformative impact of nano-biotechnology on healthcare and medical solutions.

Knowledge Portal with Floating Annotations:

- Hero image depicting nano-drug delivery or bio-nano devices.
- 10 floating knowledge portals that highlight:
    - Basics of nano-biotechnology.
    - Importance of nanoscale in biology.
    - Nano-drug delivery systems.
    - Bio-nano devices and their applications.
    - Nanoscale imaging in medicine.
    - Challenges in merging nanotech with biotech.
    - Ethical considerations in nano-biomedicine.
    - Future trends in nano-biotechnology.
    - Role of nanotech in diagnostics.
    - Nanoscale interventions in surgery.

3-D Model Integration:

- Visualize a 3-D model of a nano-biotech lab, complete with bio-reactors and nano-imaging tools.
- Engage with illustrative models of nano-drugs, bio-nano devices, and nanoscale biological structures.
- Opportunity to interact with intricate bio-nano systems in AR.

Annotations for the 3-D Model:

- Detailed annotations on bio-nano devices, drug mechanisms, and nanoscale biological phenomena.
- IntelliScan feature elucidating the nano-biotech mechanisms in various medical applications.

Assessment Creation:

- Quizzes focusing on nano-biotech concepts, applications, and potential.
- Challenges that test knowledge on nano-medical devices and nano-drug mechanisms.

AI Generated Universal Skill Simulator:

- Explore standard nano-biotech processes and their medical applications.
- AI-created 3-D animations showcasing the intersection of nanotech with biology and medicine.
- Understand and visualize how nano-biotechnology transforms patient care.

Interactive Simulation Scenarios:

- AI-driven scenarios demonstrating nano-drug delivery or the operation of bio-nano devices.
- Engage in real-world medical scenarios using EON Interact, where nano-biotech plays a pivotal role.

Incident Simulation:

- Face challenges in nano-biotech applications, like drug delivery issues or device malfunctions.
- Engage in strategic solutions to optimize the benefits of nano-biotechnology in medicine.

Faculty of Dentistry

Dental Science and Orthodontics

Oral Anatomy and Dental Procedures in VR

Dive into the world of oral anatomy and dental procedures with Virtual Reality. Get an in-depth look at teeth structures, gum conditions, and various dental procedures in an immersive 3D environment, guided by an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A close-up of a perfect set of teeth and gums.
- **10 Floating Knowledge Portals** that include:
    - Images of various oral conditions and anomalies.
    - Text explaining the oral anatomy, from teeth to palate.
    - Videos of dental professionals discussing oral care.
    - An AI Avatar walking learners through various dental procedures.

3-D Model Integration:

- **Models**: A detailed 3D model of the oral cavity, teeth, gums, and associated structures.
- **Illustrative Example**: A 3-D model showcasing a root canal procedure.
- **Editing Option**: Zoom into specific parts of the oral anatomy.
- **Personal Integration**: Integrate personal dental x-rays or images for study.

Annotations for the 3-D Model:

- Annotations detailing parts of the tooth, gum diseases, and more.
- IntelliScan feature for close-up analysis of dental conditions.
- Option to add personal notes or findings.

Automatic Assessment Creation:

- Quizzes on oral anatomy, common dental conditions, and treatments.
- Identify specific parts of the oral anatomy or dental tools used in procedures.

AI Generated Universal Skill Simulator:

- Simulations of dental procedures like fillings, extractions, and scaling.
- Demonstrations by the AI avatar for best practices during procedures.

Interactive Simulation Scenarios:

- Real-life scenarios such as handling dental emergencies or complex procedures.
- Manual simulation creation for hypothetical oral conditions or treatments.

Incident Simulation:

- Addressing complications during a dental procedure.
- Strategies for managing patient discomfort or unexpected reactions.

Orthodontic Techniques and Tools

Using Virtual Reality, delve into the techniques employed in orthodontics. Understand the tools of the trade and their application, all under the guidance of an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: Braces equipped teeth showcasing orthodontic perfection.
- **10 Floating Knowledge Portals** that include:
    - Images of different orthodontic appliances and braces.
    - Text explaining orthodontic techniques and methodologies.
    - Videos featuring orthodontists sharing their expertise.
    - An AI Avatar describing the nuances of orthodontic adjustments.

3-D Model Integration:

- **Models**: 3D models of braces, retainers, expanders, and other orthodontic appliances.

- **Illustrative Example**: A 3-D model of teeth alignment pre and post braces.
- **Editing Option**: Customize the braces design or retainer shape.
- **Personal Integration**: Integrate personal orthodontic records or designs.

Annotations for the 3-D Model:

- Annotations on types of braces, tools used, and orthodontic techniques.
- IntelliScan for a detailed breakdown of orthodontic adjustments.
- Personal annotation addition option for specific orthodontic findings.

Automatic Assessment Creation:

- Quizzes on orthodontic history, tools, techniques, and case studies.
- Locate and identify tools used in orthodontics.

AI Generated Universal Skill Simulator:

- Simulations on fixing braces, adjusting retainers, and other orthodontic tasks.
- AI-guided demonstrations on orthodontic procedures.

Interactive Simulation Scenarios:

- Scenarios like fixing a loose brace wire or adjusting a dental retainer.
- Manual creation of orthodontic scenarios for hands-on practice.

Incident Simulation:

- Managing broken braces or misplaced orthodontic tools.
- Techniques to calm anxious patients or handle orthodontic emergencies.

Dental Implant Surgery and Restoration in AR

Immerse yourself in the Augmented Reality world of dental implant surgeries. Get hands-on experience, from the initial surgical procedure to the final restoration, in an augmented real-world setting.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A detailed view of a dental implant procedure.
- **10 Floating Knowledge Portals** that include:
    - Images of various stages of implant surgeries.
    - Text detailing the science behind dental implants.

- Videos of dental surgeons explaining the implant process.
- An AI Avatar guiding users through the surgical and restoration phases.

3-D Model Integration:

- **Models**: Detailed AR models of dental implants, surgical tools, and the restoration process.
- **Illustrative Example**: A 3-D model of a dental implant integrated with a natural set of teeth.
- **Editing Option**: Examine implant types and restoration techniques.
- **Personal Integration**: Incorporate personal dental implant cases for review.

Annotations for the 3-D Model:

- Annotations detailing implant types, surgical steps, and restoration techniques.
- IntelliScan for an in-depth look at the dental implant structure.
- Option to add custom annotations on specific implant cases.

Automatic Assessment Creation:

- Quizzes on implant types, surgical techniques, and restoration methodologies.
- Identify tools or implant parts in augmented reality.

AI Generated Universal Skill Simulator:

- Simulations of implant surgeries, from drilling to placing the implant.
- Demonstrations on the restoration process, from crowns to bridges.

Interactive Simulation Scenarios:

- Real-life scenarios such as bone grafting or handling implant complications.
- Manual creation of implant scenarios for practical understanding.

Incident Simulation:

- Addressing challenges like implant rejection or post-surgical complications.
- Techniques to ensure successful implant integration and restoration.

Manufacturing and Production Engineering

Advanced Manufacturing Processes in VR

Course Summary: Engage in the advanced techniques of manufacturing using cutting-edge Virtual Reality tools. Experience manufacturing machinery, understand production lines, and explore futuristic manufacturing technologies in an immersive 3D environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A panoramic view of a high-tech manufacturing floor.
- **10 Floating Knowledge Portals** that include:
  - Images of state-of-the-art manufacturing plants worldwide.
  - Text detailing the evolution of manufacturing techniques.
  - Videos showcasing prominent figures discussing the future of manufacturing.
  - An AI Avatar guiding participants through various manufacturing processes.

3-D Model Integration:

- **Models**: Virtual assembly lines, CNC machines, and 3D printers.
- **Illustrative Example**: A 3-D model of a modern car manufacturing plant.
- **Editing Option**: Modify machinery components and layouts.
- **Personal Integration**: Incorporate custom manufacturing blueprints or machinery models.

Annotations for the 3-D Model:

- Annotations explaining advanced manufacturing machinery and techniques.
- IntelliScan feature to pinpoint and elaborate on intricate manufacturing components.
- Manual annotation addition to highlight specific aspects.

Automatic Assessment Creation:

- Quizzes on manufacturing history, major innovations, and modern challenges.
- Locate and identify manufacturing tools and processes.

AI Generated Universal Skill Simulator:

- Simulate operations of complex machinery.

- Demonstrations on advanced manufacturing techniques like additive manufacturing.

Interactive Simulation Scenarios:

- Real-life challenges like machinery malfunctions or efficiency optimization.
- Manually create custom manufacturing scenarios for hands-on experience.

Incident Simulation:

- Crisis management during manufacturing disasters or unexpected halts.
- Adaptation techniques for swift recovery in the manufacturing landscape.

Robotics and Automation in Production

Course Summary: Step into the dynamic world of robotics and automation with VR technology. Explore the intricate mechanics of robots, understand automation's role in modern production, and engage with real-time simulations.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A robot arm meticulously assembling a product.
- **10 Floating Knowledge Portals** that include:
  - Images of robots in action across various industries.
  - Text on the evolution and potential of robotics in production.
  - Videos of experts analyzing the convergence of robotics and production.
  - An AI Avatar explaining robotics mechanisms and their integration.

3-D Model Integration:

- **Models**: Virtual robots, conveyor belts, and automated systems.
- **Illustrative Example**: A 3-D model of a robot-operated packaging line.
- **Editing Option**: Adjust robot arm movements and automation sequences.
- **Personal Integration**: Integrate proprietary robot designs or automation schemes.

Annotations for the 3-D Model:

- Annotations detailing robot parts, functionalities, and automation sequences.
- IntelliScan feature for an in-depth exploration of robotic components.
- Add personal annotations for bespoke insights.

Automatic Assessment Creation:

- Quizzes on robotics evolution, major achievements, and future trends.
- Identify various robotic actions and predict automation sequences.

AI Generated Universal Skill Simulator:

- Simulations on robot programming and real-time problem-solving.
- Demonstrations of robotic assembly and product handling.

Interactive Simulation Scenarios:

- Real-life scenarios like robot malfunctions or system integration challenges.
- Create hands-on scenarios for enhancing automation skills.

Incident Simulation:

- Addressing system breakdowns and ensuring continuous robot-led production.
- Techniques for swift troubleshooting and system recovery.

Quality Control and Six Sigma in AR

Course Summary: Immerse yourself in the meticulous world of quality control with Augmented Reality. Grasp the principles of Six Sigma, understand defect identification, and enhance production quality in real-time settings.

Knowledge Portal with Floating Annotations:

- **Hero Image**: Quality control experts examining a product against a blueprint.
- **10 Floating Knowledge Portals** that include:
  - Images depicting quality control processes across sectors.
  - Text on the significance and methodologies of Six Sigma.
  - Videos of quality control maestros sharing insights.
  - An AI Avatar elaborating on Six Sigma principles and quality benchmarks.

3-D Model Integration:

- **Models**: Product models, quality measurement tools, and Six Sigma charts.
- **Illustrative Example**: A 3-D model of a Six Sigma DMAIC flowchart.
- **Editing Option**: Customize quality benchmarks and assessment metrics.
- **Personal Integration**: Incorporate custom quality control procedures or instruments.

Annotations for the 3-D Model:

- Annotations pinpointing quality benchmarks and Six Sigma methodologies.
- IntelliScan feature for in-depth quality assessments.
- Option to add annotations based on personal QC experiences.

Automatic Assessment Creation:

- Quizzes on quality control history, Six Sigma principles, and common challenges.
- Identify defects in products or spot discrepancies in quality control charts.

AI Generated Universal Skill Simulator:

- Simulations on quality measurement and Six Sigma problem-solving.
- Demonstrations on real-life QC scenarios and solutions.

Interactive Simulation Scenarios:

- Real-life challenges in quality assurance and defect management.
- Custom scenarios to test quality control strategies and solutions.

Incident Simulation:

- Strategies to tackle unexpected quality issues in production.
- Best practices for swift rectification and maintaining quality standards.

Institute of Field Robotics

Robotics and AI

Robot Kinematics and Dynamics Simulations

Course Summary: Explore the realm of robot movement and mechanics through immersive simulations. Understand the underlying principles guiding robot dynamics and kinematics in an interactive 3D space.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A robotic arm performing a complex task.
- **10 Floating Knowledge Portals** that include:
    - Images of different robots and their internal mechanics.
    - Text detailing the principles of robot kinematics and dynamics.
    - Videos of experts explaining robot motion and forces.

- An AI Avatar guiding learners through various robot simulations.

3-D Model Integration:

- **Models**: Detailed robot structures, joints, and actuators.
- **Illustrative Example**: A 3-D model of a humanoid robot walking.
- **Editing Option**: Adjust robot movements and configurations.
- **Personal Integration**: Import your own robot designs for simulation.

Annotations for the 3-D Model:

- Annotations on robot components and their functions.
- IntelliScan feature for real-time analysis of robot motion.
- Option to manually add observations and annotations.

Automatic Assessment Creation:

- Quizzes on robot movement theories, dynamics equations, and kinematics principles.
- Locate and identify parts of robots in motion.

AI Generated Universal Skill Simulator:

- Simulations of robot movements, force distributions, and torque calculations.
- Demonstrations of practical robot applications in industries.

Interactive Simulation Scenarios:

- Real-life scenarios like robots on a factory floor or navigating uneven terrain.
- Manual simulation creation for specific robot challenges.

Incident Simulation:

- Addressing robot malfunctions or unexpected behaviors.
- Strategies to ensure smooth robot operations in varied conditions.

Artificial Intelligence in Robotics

Course Summary: Dive into the integration of AI in robotics, understanding how machines learn, adapt, and make decisions. Experience firsthand the AI-driven algorithms guiding robotic operations.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A robot processing data and adapting to its environment.
- **10 Floating Knowledge Portals** that include:
  - Images of robots equipped with AI systems.
  - Text on AI algorithms and their application in robotics.
  - Videos of roboticists explaining AI-driven robotics.
  - An AI Avatar illustrating AI implementations in various robots.

3-D Model Integration:

- **Models**: Robots equipped with sensors, processors, and AI modules.
- **Illustrative Example**: A 3-D model of a robot navigating using AI algorithms.
- **Editing Option**: Modify AI parameters and observe robot behaviors.
- **Personal Integration**: Integrate custom AI algorithms for testing.

Annotations for the 3-D Model:

- Annotations detailing AI modules, sensors, and data processing.
- IntelliScan for real-time analysis of AI-driven robot actions.
- Option to add custom notes and insights.

Automatic Assessment Creation:

- Quizzes on AI principles, robotics algorithms, and machine learning in robotics.
- Identify AI-driven actions in given robot scenarios.

AI Generated Universal Skill Simulator:

- Simulations showcasing AI-driven decision-making, object recognition, and adaptation.
- Demonstrations of robots solving problems using AI.

Interactive Simulation Scenarios:

- Real-life scenarios like robots interacting with humans or navigating unknown environments.
- Manual simulation creation for AI-driven robot challenges.

Incident Simulation:

- Addressing unexpected outcomes from AI decisions.
- Strategies to optimize AI-driven robot operations.

Drone Navigation and Aerial Robotics in AR

Course Summary: Embark on a journey into the skies, understanding the intricacies of drone navigation and the principles of aerial robotics using Augmented Reality (AR).

Knowledge Portal with Floating Annotations:

- **Hero Image**: A drone hovering over a scenic landscape.
- **10 Floating Knowledge Portals** that include:
    - Images of various drones and aerial robots.
    - Text on the principles of drone navigation and aerial robotics.
    - Videos of pilots explaining drone controls and maneuvers.
    - An AI Avatar guiding learners through aerial dynamics and control systems.

3-D Model Integration:

- **Models**: Different drone designs, internal mechanics, and flight systems.
- **Illustrative Example**: A 3-D model of a drone performing an aerial maneuver.
- **Editing Option**: Adjust drone parameters and control settings.
- **Personal Integration**: Integrate custom drone designs or flight paths.

Annotations for the 3-D Model:

- Annotations detailing drone components, sensors, and propulsion systems.
- IntelliScan feature for real-time analysis of drone navigation.
- Manual annotation addition for specific drone insights.

Automatic Assessment Creation:

- Quizzes on aerial dynamics, drone flight principles, and robotics in aviation.
- Identify and locate drone components and sensors in flight.

AI Generated Universal Skill Simulator:

- Simulations of drone flight paths, obstacle avoidance, and aerial photography techniques.
- Demonstrations of drones performing tasks in various scenarios.

Interactive Simulation Scenarios:

- Real-life scenarios like drones in search and rescue missions or filming events.
- Manual simulation creation for specific aerial challenges.

Incident Simulation:

- Managing drone malfunctions or navigation challenges.
- Strategies for efficient drone operations in diverse conditions.

School of Liberal Arts

Culture and Communication Studies

Intercultural Communication in VR

Course Summary: Experience the richness of global cultures and the nuances of intercultural communication in an immersive VR environment. Engage with virtual scenarios that highlight cultural interactions and develop essential communication skills for a globalized world.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A virtual globe highlighting different cultures and regions.
- **10 Floating Knowledge Portals** that include:
    - Images of diverse global gatherings.
    - Text on the principles of intercultural communication.
    - Videos of experts discussing cultural communication strategies.
    - An AI Avatar guiding users through cultural etiquettes and faux pas.

3-D Model Integration:

- **Models**: Virtual meeting rooms, cultural artifacts, traditional attire, and more.
- **Illustrative Example**: A 3-D model of a traditional tea ceremony.
- **Editing Option**: Adjust cultural settings and interactions.
- **Personal Integration**: Upload your cultural experiences or interactions.

Annotations for the 3-D Model:

- Annotations on cultural practices, symbols, and gestures.
- IntelliScan for in-depth cultural knowledge.
- Manual annotations to share personal cultural insights.

Automatic Assessment Creation:

- Quizzes on cultural norms, communication strategies, and global etiquettes.
- Identify diverse cultural symbols or gestures in virtual scenarios.

AI Generated Universal Skill Simulator:

- Simulations of global business meetings, festivals, and ceremonies.
- AI-guided cultural role-play scenarios.

Interactive Simulation Scenarios:

- Scenarios like negotiating in Japan or attending a wedding in India.
- Manual creation of global interaction scenarios for deep cultural understanding.

Incident Simulation:

- Handling communication misunderstandings or cultural insensitivities.
- Strategies for mending cross-cultural communication breaches.

Thai History and Southeast Asian Studies

Course Summary: Embark on a virtual journey through the annals of Thai history and the broader scope of Southeast Asian studies. Uncover the rich tapestry of cultures, dynasties, and events that shaped the region using cutting-edge VR technology.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A panoramic view of historic Thai landmarks and symbols.
- **10 Floating Knowledge Portals** that include:
  - Images of ancient manuscripts and artifacts.
  - Text detailing the dynasties and events that shaped Thai history.
  - Videos of historians and experts sharing insights on Southeast Asia.
  - An AI Avatar guiding users through significant periods of Thai history.

3-D Model Integration:

- **Models**: Virtual replicas of Thai temples, palaces, and historic sites.
- **Illustrative Example**: A 3-D model of the Grand Palace in Bangkok.
- **Editing Option**: Explore different periods or regions of interest.
- **Personal Integration**: Upload your research or historical findings.

Annotations for the 3-D Model:

- Annotations on historical events, figures, and artifacts.
- IntelliScan for detailed historical context.
- User-added annotations for personal historical insights.

Automatic Assessment Creation:

- Quizzes on Thai dynasties, historic events, and regional influences.
- Identify significant events or figures in Southeast Asian history.

AI Generated Universal Skill Simulator:

- Simulations of historic events, battles, or cultural shifts.
- AI-guided exploration of ancient Thai cities or rituals.

Interactive Simulation Scenarios:

- Scenarios like visiting Angkor Wat or witnessing a traditional Thai dance.
- Manual creation of historical scenarios for in-depth exploration.

Incident Simulation:

- Navigating historic challenges like trade disputes or diplomatic negotiations.
- Strategies for understanding ancient diplomatic and cultural dynamics.

Language Learning and Linguistics in AR

Course Summary: Harness the capabilities of Augmented Reality to dive deep into the world of languages and linguistics. Interact with real-world texts, sounds, and symbols while receiving real-time feedback and insights from an AI-powered guide.

Knowledge Portal with Floating Annotations:

- **Hero Image**: An array of global scripts and phonetic symbols.
- **10 Floating Knowledge Portals** that include:
    - Images of ancient scripts and modern linguistic tools.
    - Text on the evolution of languages and linguistic principles.
    - Videos of linguistic experts sharing their expertise.
    - An AI Avatar offering real-time language lessons and feedback.

3-D Model Integration:

- **Models**: 3D phonetic symbols, script evolutions, and language trees.
- **Illustrative Example**: A 3-D model of the Rosetta Stone.
- **Editing Option**: Interact with different language scripts and sounds.
- **Personal Integration**: Integrate your linguistic research or studies.

Annotations for the 3-D Model:

- Annotations detailing linguistic phenomena and language structures.
- IntelliScan for dissecting complex linguistic elements.
- Personal annotations to share linguistic insights and learnings.

Automatic Assessment Creation:

- Quizzes on phonetics, syntax, semantics, and language evolution.
- Identify languages or scripts based on given samples.

AI Generated Universal Skill Simulator:

- Simulations of language pronunciation, script writing, and conversation.
- AI-guided language immersion scenarios.

Interactive Simulation Scenarios:

- Scenarios like engaging in a multilingual conversation or deciphering ancient scripts.
- Manual creation of linguistic scenarios for hands-on language learning.

Incident Simulation:

- Handling language barriers or linguistic challenges.
- Strategies for effective multilingual communication and linguistic problem-solving.

School of Bioresources and Technology

Bioprocess Technology

Bioreactor Design and Operation in VR

Course Summary: Step into the world of bioreactors using immersive Virtual Reality. Experience firsthand the design, functionality, and operational intricacies of bioreactors in a lifelike environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A detailed view of a modern bioreactor in operation.
- **10 Floating Knowledge Portals** that include:
  - Images of various bioreactor designs.
  - Text about the history and advancements in bioreactor technology.
  - Videos of industry experts discussing operational best practices.
  - An AI Avatar guiding learners through the complete bioreactor lifecycle.

3-D Model Integration:

- **Models**: Different bioreactor designs, internal components, and operational mechanisms.
- **Illustrative Example**: A 3-D model of a stirred-tank bioreactor.
- **Editing Option**: Modify bioreactor components for a tailored design.
- **Personal Integration**: Import your own bioreactor design concepts.

Annotations for the 3-D Model:

- Annotations detailing each component of the bioreactor.
- IntelliScan feature for real-time analysis of bioreactor operations.
- Option for users to add annotations based on personal observations.

Automatic Assessment Creation:

- Quizzes on bioreactor design principles, operational mechanics, and maintenance.
- Locate and identify various bioreactor components in VR scenarios.

AI Generated Universal Skill Simulator:

- Simulation of bioreactor startup, operation, and shutdown sequences.
- Animated procedures showcasing bioreactor optimization and troubleshooting.

Interactive Simulation Scenarios:

- Scenarios such as bioreactor contamination, aeration issues, or temperature fluctuations.
- User-generated scenarios for personalized learning experiences.

Incident Simulation:

- Addressing unforeseen issues like equipment malfunctions or culture crashes.
- Strategic problem-solving in a simulated bioreactor environment.

Fermentation and Downstream Processing

Course Summary: Dive deep into fermentation processes and discover the intricacies of downstream processing using cutting-edge VR technology. Engage with detailed simulations of fermentation tanks, filtration systems, and more.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A vibrant image of fermentation tanks in a bioprocessing facility.
- **10 Floating Knowledge Portals** that include:
  - Images of different fermentation setups.
  - Text detailing fermentation types and their applications.
  - Videos of biotechnologists discussing downstream processing.
  - An AI Avatar providing insights into optimizing fermentation outcomes.

3-D Model Integration:

- **Models**: Virtual fermentation tanks, purification systems, and chromatography units.
- **Illustrative Example**: A 3-D model of a fed-batch fermentation system.
- **Editing Option**: Customize components for specific fermentation processes.
- **Personal Integration**: Incorporate designs of specialized fermentation units.

Annotations for the 3-D Model:

- Annotations on fermentation kinetics and downstream processing stages.
- IntelliScan for detailed analysis of product recovery and purification.
- Manual annotations for tailored learning experiences.

Automatic Assessment Creation:

- Quizzes on fermentation biology, process design, and downstream techniques.
- Identify components in intricate downstream processing units.

AI Generated Universal Skill Simulator:

- Simulated demonstrations of fermentation monitoring and downstream operations.
- Animated walkthroughs of product purification and isolation.

Interactive Simulation Scenarios:

- Real-world challenges like product contamination or process scaling.
- Manual simulations to visualize process optimization solutions.

Incident Simulation:

- Managing unexpected fermentation disruptions or downstream bottlenecks.
- Reactive strategies for maintaining product quality and yield.

Enzyme Technology and Bio-catalysis in AR

Course Summary: Using Augmented Reality, delve into the dynamic domain of enzyme technology. Explore enzyme kinetics, biocatalysis applications, and experience real-time enzyme reactions augmented into your environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A depiction of enzymes interacting with substrates.
- **10 Floating Knowledge Portals** that include:
  - Images of key enzymes and their industrial applications.
  - Text on enzyme mechanisms and bio-catalysis concepts.
  - Videos of enzymologists explaining reaction kinetics.
  - An AI Avatar illustrating the power and potential of enzymes in various sectors.

3-D Model Integration:

- **Models**: Virtual enzyme structures, reaction pathways, and biocatalysis setups.
- **Illustrative Example**: A 3-D model of the enzyme catalase breaking down hydrogen peroxide.
- **Editing Option**: Manipulate enzyme structures for detailed analysis.
- **Personal Integration**: Integrate specific enzyme studies or experiments.

Annotations for the 3-D Model:

- Annotations explaining enzyme kinetics, activation sites, and inhibition.
- IntelliScan to interpret enzyme reactions in real-time.
- Customizable annotations for in-depth enzyme research.

Automatic Assessment Creation:

- Quizzes on enzyme classification, mechanisms, and industrial applications.
- Identify enzymes based on their reaction pathways in AR scenarios.

AI Generated Universal Skill Simulator:

- Animated simulations showcasing enzyme-catalyzed reactions.
- Walkthroughs of bio-catalysis in industries like pharma, agriculture, and textiles.

Interactive Simulation Scenarios:

- Scenarios such as enzyme inhibition, substrate saturation, or product inhibition.
- User-generated bio-catalysis scenarios for enhanced understanding.

Incident Simulation:

- Tackling challenges like enzyme denaturation or unexpected reaction outcomes.
- Reactive strategies to optimize enzyme performance in various conditions.

International College

International Business and Engineering

Global Supply Chain and Logistics in VR

Course Summary: Experience the complexities of global supply chains using Virtual Reality. Explore warehouses, transport systems, and international trade routes in a fully immersive environment, guided by an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A busy port with containers being loaded onto a ship.
- **10 Floating Knowledge Portals** that include:
    - Images of major trade ports and transport hubs.

- Text detailing the intricacies of supply chain management.
- Videos of logistics experts discussing challenges and strategies.
- An AI Avatar elucidating the global supply chain's various components.

3-D Model Integration:

- **Models**: Virtual warehouses, trucks, ships, and planes.
- **Illustrative Example**: A 3-D model of an automated warehouse.
- **Editing Option**: Plan and customize supply routes.
- **Personal Integration**: Add your own logistical data or flowcharts.

Annotations for the 3-D Model:

- Annotations explaining different transportation methods and their pros/cons.
- IntelliScan feature to identify supply chain disruptions.
- Manual annotation addition for user-specific logistics strategies.

Automatic Assessment Creation:

- Quizzes on supply chain theories, global trade regulations, and logistical challenges.
- Identify different logistical solutions for presented scenarios.

AI Generated Universal Skill Simulator:

- Simulation of warehouse operations, freight management, and customs clearance.
- Demonstrations of real-time logistical decision-making.

Interactive Simulation Scenarios:

- Real-life scenarios such as managing a supply chain disruption.
- Manual simulation creation to strategize supply chain optimizations.

Incident Simulation:

- Handling supply chain crises like transport strikes or customs delays.
- Mitigation strategies for unexpected logistical challenges.

Cross-Cultural Management and Leadership

Course Summary: Using advanced VR techniques, immerse yourself in diverse workplace cultures. Understand global leadership styles, communication nuances, and manage multicultural teams effectively with the guidance of an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A boardroom meeting with diverse participants.
- **10 Floating Knowledge Portals** that include:
  - Images from workplaces around the world.
  - Text on cultural norms and their implications in management.
  - Videos of leadership experts discussing global management techniques.
  - An AI Avatar guiding through various leadership styles across cultures.

3-D Model Integration:

- **Models**: Virtual multicultural teams, office spaces, and boardrooms.
- **Illustrative Example**: A 3-D model of a global company's headquarters.
- **Editing Option**: Simulate diverse team interactions.
- **Personal Integration**: Incorporate your own management experiences or case studies.

Annotations for the 3-D Model:

- Annotations on different communication styles and their implications.
- IntelliScan to analyze and provide insights on team dynamics.
- Option to add personal reflections and observations.

Automatic Assessment Creation:

- Quizzes on cultural norms, leadership theories, and communication styles.
- Identify and react to various cross-cultural scenarios.

AI Generated Universal Skill Simulator:

- Simulation of team meetings, feedback sessions, and negotiation processes.
- Demonstrations of leadership in diverse settings.

Interactive Simulation Scenarios:

- Real-life scenarios like navigating a cultural faux pas.
- Manual simulation creation for multicultural team-building exercises.

Incident Simulation:

- Addressing cultural misunderstandings or communication breakdowns.
- Strategies for inclusive leadership and team cohesion.

International Engineering Standards in AR

Course Summary: Using Augmented Reality, delve deep into the world of international engineering standards. Learn, visualize, and apply global engineering practices in a real-world overlay with the expertise of an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A blueprint of an engineering project adhering to international standards.
- **10 Floating Knowledge Portals** that include:
  - Images of iconic engineering marvels globally.
  - Text detailing various international engineering standards.
  - Videos of engineers explaining the importance of these standards.
  - An AI Avatar emphasizing the application of these standards.

3-D Model Integration:

- **Models**: Virtual blueprints, machinery, and structures.
- **Illustrative Example**: A 3-D model of a sustainable construction project.
- **Editing Option**: Modify and adapt engineering designs.
- **Personal Integration**: Incorporate your own engineering projects or designs.

Annotations for the 3-D Model:

- Annotations detailing specific international standards and their implications.
- IntelliScan to compare and contrast different engineering standards.
- Option to add personal insights and learnings.

Automatic Assessment Creation:

- Quizzes on engineering principles, international standards, and global best practices.
- Identify and apply suitable standards for given engineering challenges.

AI Generated Universal Skill Simulator:

- Simulation of engineering processes, quality checks, and compliance tests.
- Demonstrations on the practical application of global engineering standards.

Interactive Simulation Scenarios:

- Real-life scenarios such as ensuring a project meets global sustainability standards.
- Manual simulation creation for engineering problem-solving tasks.

Incident Simulation:

- Addressing challenges like non-compliance or engineering failures.
- Strategies for continuous improvement and adherence to global standards.

Faculty of Pharmacy

Pharmaceutical Sciences

Drug Design and Molecular Pharmacology in VR

Course Summary: Experience the cutting-edge world of drug design and molecular pharmacology through immersive Virtual Reality (VR). Delve into the molecular world, understand drug interactions, and witness the intricacies of pharmacological processes.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A molecule structure of a popular drug.
- **10 Floating Knowledge Portals** that include:
  - Images of different drug molecules.
  - Text explaining the principles of drug design.
  - Videos of leading pharmacologists discussing drug interactions.
  - An AI Avatar detailing the drug design process.

3-D Model Integration:

- **Models**: 3D molecular structures, drug design labs, and testing equipment.
- **Illustrative Example**: A 3-D model of the drug design process.
- **Editing Option**: Customize molecular structures and drug compositions.
- **Personal Integration**: Integrate custom molecular designs.

Annotations for the 3-D Model:

- Annotations on molecular structures and their pharmacological properties.
- IntelliScan feature to delve deep into molecular interactions.
- User annotations for personalized notes.

Automatic Assessment Creation:

- Quizzes on drug design principles, molecular pharmacology, and drug interactions.
- Identify molecular structures and predict drug reactions.

AI Generated Universal Skill Simulator:

- Simulate drug interactions at the molecular level.
- Animated demonstrations of drug design methodologies.

Interactive Simulation Scenarios:

- Scenarios of drug trials, molecular interactions, and pharmacological effects.
- User-created scenarios for custom molecular designs.

Incident Simulation:

- Address challenges like adverse drug reactions or unexpected molecular interactions.
- Strategies for troubleshooting in drug design.

Clinical Pharmacy and Patient Counseling

Course Summary: Engage in an interactive learning experience about the practice of clinical pharmacy and the art of patient counseling. Gain insights into drug prescriptions, therapy management, and build communication skills through Virtual Reality.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A pharmacist counseling a patient.
- **10 Floating Knowledge Portals** that include:
    - Images from clinical pharmacy settings.
    - Text on the principles of clinical pharmacy.
    - Videos of expert pharmacists and their patient counseling sessions.

- An AI Avatar guiding through the counseling process.

3-D Model Integration:

- **Models**: Virtual pharmacy, drug cabinets, patient counseling rooms.
- **Illustrative Example**: A 3-D model of a pharmacy interaction.
- **Editing Option**: Customize the pharmacy setup and patient interactions.
- **Personal Integration**: Add scenarios from personal experiences.

Annotations for the 3-D Model:

- Annotations on drug labels, side effects, and counseling techniques.
- IntelliScan to identify and elaborate on various drugs.
- Manual annotations for personalized insights.

Automatic Assessment Creation:

- Quizzes on clinical pharmacy, drug interactions, and counseling techniques.
- Identify drugs based on descriptions and counsel virtual patients.

AI Generated Universal Skill Simulator:

- Simulate patient counseling sessions.
- Demonstrations on therapy management and drug dispensing.

Interactive Simulation Scenarios:

- Real-life scenarios like handling drug allergies or therapy management.
- Custom simulations for diverse patient interactions.

Incident Simulation:

- Address challenges like drug shortages or patient misinformation.
- Techniques for managing difficult patient interactions.

Pharmaceutical Biotechnology in AR

Course Summary: Explore the pioneering field of pharmaceutical biotechnology using Augmented Reality (AR). Understand biotechnological processes, genetic engineering, and biopharmaceutical production in an enhanced learning environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A bioreactor used in pharmaceutical biotechnology.
- **10 Floating Knowledge Portals** that include:
    - Images of biotechnological processes and equipment.
    - Text on the evolution and principles of pharmaceutical biotechnology.
    - Videos from leading biotechnologists sharing insights.
    - An AI Avatar explaining biotechnological processes.

3-D Model Integration:

- **Models**: Bioreactors, DNA structures, biotechnological labs.
- **Illustrative Example**: A 3-D model of a biopharmaceutical production line.
- **Editing Option**: Customize DNA structures or biotechnological setups.
- **Personal Integration**: Add your own biotechnological designs or processes.

Annotations for the 3-D Model:

- Annotations detailing biotechnological equipment and genetic structures.
- IntelliScan feature to delve deep into genetic engineering processes.
- Personalized annotations for user insights.

Automatic Assessment Creation:

- Quizzes on pharmaceutical biotechnology, genetic engineering, and biopharmaceuticals.
- Identify biotechnological equipment and predict genetic outcomes.

AI Generated Universal Skill Simulator:

- Simulate biopharmaceutical production processes.
- Animated demonstrations of genetic engineering techniques.

Interactive Simulation Scenarios:

- Real-life scenarios like DNA manipulation or biopharmaceutical production.
- User-created simulations for custom biotechnological challenges.

Incident Simulation:

- Address challenges like genetic mutations or production errors.
- Strategies for troubleshooting in pharmaceutical biotechnology.

School of Architecture and Design

Interior and Product Design

Sustainable Design Principles in VR

Course Summary: Engage in a Virtual Reality (VR) journey into the realm of sustainable design. Unveil the principles of green architecture, eco-friendly materials, and energy-efficient techniques with immersive hands-on simulations.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A panoramic view of an eco-friendly building with green roofs and solar panels.
- **10 Floating Knowledge Portals** that include:
    - Images showcasing globally renowned sustainable architectural wonders.
    - Text on the evolution and importance of sustainable design.
    - Videos of leading architects discussing their sustainable projects.
    - An AI Avatar guiding users through green design techniques.

3-D Model Integration:

- **Models**: Virtual sustainable buildings, green rooftops, rainwater harvesting systems, and more.
- **Illustrative Example**: A 3-D model of an off-grid eco-friendly home.
- **Editing Option**: Adjust sustainable design elements and layout.
- **Personal Integration**: Import your own green design concepts.

Annotations for the 3-D Model:

- Annotations elucidating various sustainable materials and their benefits.
- IntelliScan offering insight into renewable energy solutions.
- Option to add user-specific notes on sustainable innovations.

Automatic Assessment Creation:

- Quizzes on green materials, sustainable architectural styles, and eco-friendly technologies.
- Identify and locate sustainable elements in a building's design.

AI Generated Universal Skill Simulator:

- Simulations on designing energy-efficient buildings.

- Demonstrations on using renewable materials in construction.

Interactive Simulation Scenarios:

- Real-life scenarios such as converting a traditional home into a sustainable one.
- Create scenarios to implement green solutions in urban settings.

Incident Simulation:

- Addressing challenges in sustainable design, such as material sourcing.
- Crafting solutions for common barriers in sustainable architecture.

Product Prototyping and 3D Printing

Course Summary: Delve into the groundbreaking world of product prototyping and 3D printing. Using VR, explore the complete process from conceptualizing a product to bringing it to tangible form using 3D printers.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A 3D printer in action, crafting a complex product prototype.
- **10 Floating Knowledge Portals** that include:
  - Images of revolutionary 3D printed products.
  - Text on the significance and evolution of 3D printing.
  - Videos of experts discussing rapid prototyping techniques.
  - An AI Avatar navigating users through the 3D printing process.

3-D Model Integration:

- **Models**: Virtual 3D printers, product prototypes, and printing materials.
- **Illustrative Example**: A 3-D model of a futuristic car prototype.
- **Editing Option**: Modify prototype designs and printing parameters.
- **Personal Integration**: Integrate your own product designs for 3D printing.

Annotations for the 3-D Model:

- Annotations highlighting various 3D printing techniques and materials.
- IntelliScan analyzing different stages of product prototyping.
- Add personal annotations to describe your unique product concepts.

Automatic Assessment Creation:

- Quizzes on 3D printing technologies, material science, and rapid prototyping.
- Locate and identify elements in a 3D printer's design.

AI Generated Universal Skill Simulator:

- Simulations on designing and printing varied product prototypes.
- Demonstrations on optimizing 3D printer settings for diverse materials.

Interactive Simulation Scenarios:

- Real-life scenarios like prototyping for medical implants or automotive parts.
- Create your own scenarios for innovative product prototyping.

Incident Simulation:

- Handling challenges in 3D printing like material jams or design flaws.
- Innovating solutions for common 3D printing problems.

Interior Space Planning in AR

Course Summary: Experience the magic of Augmented Reality (AR) in the domain of interior design. Dive deep into space planning, furniture arrangement, and aesthetic detailing in real-time, overlaying digital enhancements on physical spaces.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A modern living room space augmented with virtual furniture and decor.
- **10 Floating Knowledge Portals** that include:
  - Images of acclaimed interior designs.
  - Text on the principles of space planning.
  - Videos of renowned interior designers sharing their insights.
  - An AI Avatar assisting users in designing spaces using AR.

3-D Model Integration:

- **Models**: Virtual furniture, decor, light fixtures, and more.
- **Illustrative Example**: A 3-D model of a modular kitchen setup.
- **Editing Option**: Re-arrange virtual furniture and decor within spaces.
- **Personal Integration**: Import your own furniture designs or decor ideas.

Annotations for the 3-D Model:

- Annotations detailing various interior design styles and elements.
- IntelliScan offering insights into ergonomics and space utilization.
- Option to add user-specific notes on their design preferences.

Automatic Assessment Creation:

- Quizzes on interior design principles, styles, and space planning techniques.
- Identify and locate key elements in a room's design.

AI Generated Universal Skill Simulator:

- Simulations on arranging and designing different room setups.
- Demonstrations on combining aesthetics with functionality.

Interactive Simulation Scenarios:

- Real-life scenarios like converting a garage into a cozy home office.
- Create your own scenarios for diverse room layouts and designs.

Incident Simulation:

- Addressing common interior design challenges, such as limited space or lighting issues.
- Brainstorming solutions for real-life design dilemmas.

Faculty of Digital Technology

Digital Arts and Multimedia

3D Animation Techniques in VR

Course Summary: Explore the dynamic world of 3D animation using Virtual Reality. Engage with animation principles, character modeling, and motion graphics in an immersive environment, guided by an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A 3D animated character in mid-motion.
- **10 Floating Knowledge Portals** that include:
    - Images of iconic 3D animated scenes and characters.
    - Text on the evolution and principles of 3D animation.

- Videos of professional animators explaining their craft.
- An AI Avatar illustrating key animation techniques.

3-D Model Integration:

- **Models**: Virtual animated characters, backgrounds, and props.
- **Illustrative Example**: A 3-D model of an animation studio.
- **Editing Option**: Modify animations and graphics.
- **Personal Integration**: Input and manipulate your own animation sequences.

Annotations for the 3-D Model:

- Annotations elucidating animation frames and character rigging.
- IntelliScan feature for detailed animation breakdowns.
- Personalized annotations for user insights and notes.

Automatic Assessment Creation:

- Quizzes on animation history, software tools, and animation styles.
- Identify and break down animation sequences and techniques.

AI Generated Universal Skill Simulator:

- Simulate character modeling and motion graphics.
- Interactive demonstrations on rigging and texturing.

Interactive Simulation Scenarios:

- Real-life scenarios such as animating for movies versus games.
- Manually create animation scenarios based on your concepts.

Incident Simulation:

- Navigating animation glitches and software errors.
- Real-time problem-solving during the animation process.

User Experience and Interface Design

Course Summary: Dive into the foundational elements of UX/UI design. Explore wireframing, prototyping, and user testing in an enhanced visual environment, directed by an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A well-designed digital user interface.
- **10 Floating Knowledge Portals** that include:
    - Images of award-winning UX/UI designs.
    - Text explaining the principles and history of UX/UI design.
    - Videos of UX/UI experts sharing their insights.
    - An AI Avatar breaking down key design components.

3-D Model Integration:

- **Models**: Virtual digital interfaces, websites, and mobile apps.
- **Illustrative Example**: A 3-D model of a digital design studio.
- **Editing Option**: Adjust design elements and layouts.
- **Personal Integration**: Bring in your own design mockups.

Annotations for the 3-D Model:

- Annotations detailing various interface elements.
- IntelliScan for in-depth design element explanations.
- Personal annotations to highlight user insights.

Automatic Assessment Creation:

- Quizzes on design principles, typography, and color theory.
- Identify and analyze specific design components.

AI Generated Universal Skill Simulator:

- Simulations of wireframing and prototyping processes.
- Interactive demonstrations on user testing and feedback collection.

Interactive Simulation Scenarios:

- Real-life scenarios like redesigning for better user engagement.
- Create your own design challenges to solve.

Incident Simulation:

- Managing unresponsive design elements or navigation errors.
- Strategies for real-time design troubleshooting.

Virtual Film Production and Directing in AR

Course Summary: Unleash your directorial vision with Augmented Reality, exploring the nuances of virtual film production. Grasp scripting, scene setting, and directing actors in a real-world overlaid with digital enhancements.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A director in action with an AR headset.
- **10 Floating Knowledge Portals** that include:
  - Images from famous film sets enhanced with AR.
  - Text detailing the convergence of film and augmented reality.
  - Videos of directors sharing their AR filmmaking experiences.
  - An AI Avatar guiding the virtual film production journey.

3-D Model Integration:

- **Models**: Virtual film sets, actors, and augmented props.
- **Illustrative Example**: A 3-D model of an AR-enabled film camera.
- **Editing Option**: Adjust scenes, camera angles, and augmented elements.
- **Personal Integration**: Incorporate your own scripts and film concepts.

Annotations for the 3-D Model:

- Annotations on camera techniques and AR overlays.
- IntelliScan to break down scene compositions with AR elements.
- Option for personalized directorial notes.

Automatic Assessment Creation:

- Quizzes on film genres, AR technologies, and directorial techniques.
- Identify AR elements in given film scenes.

AI Generated Universal Skill Simulator:

- Simulations of directing actors, setting scenes, and using AR overlays.
- Demonstrations on utilizing AR for special effects.

Interactive Simulation Scenarios:

- Real-life scenarios like shooting in mixed-reality settings.
- Manual simulation creation for unique AR film scenes.

Incident Simulation:

- Addressing AR malfunctions or actor-direction challenges.
- Strategies for seamlessly blending reality with augmented components.

Graduate School of Music

Music Technology and Production

Music Production in Virtual Studios

Course Summary: Immerse yourself in the art of music production using cutting-edge Virtual Studios. Engage in hands-on experiences, manipulate virtual instruments, and produce tracks, all guided by an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A panoramic view of a state-of-the-art music studio.
- **10 Floating Knowledge Portals** that include:
  - Images of historic music studios and iconic producers.
  - Text about the evolution of music production.
  - Videos of producers sharing their music creation process.
  - An AI Avatar guiding users through the music production journey.

3-D Model Integration:

- **Models**: Virtual soundboards, instruments, and studio equipment.
- **Illustrative Example**: A 3-D model of a mixing console.
- **Editing Option**: Customize the virtual studio layout.
- **Personal Integration**: Upload your music tracks for editing.

Annotations for the 3-D Model:

- Annotations explaining studio equipment functions and applications.
- IntelliScan feature to identify instruments and equipment.
- Option to add personal notes and insights.

Automatic Assessment Creation:

- Quizzes on music theory, production techniques, and audio engineering basics.
- Identify different musical elements in provided tracks.

AI Generated Universal Skill Simulator:

- Simulations of track mixing, mastering, and sound layering.
- Demonstrations on beat creation and arrangement.

Interactive Simulation Scenarios:

- Scenarios like live studio sessions, jamming, and multi-track recording.
- Design your own music production challenges and simulations.

Incident Simulation:

- Handling equipment malfunction or sound distortions.
- Strategies to tackle real-time production issues.

Instrument Learning and Techniques in VR

Course Summary: Delve deep into the world of musical instruments using Virtual Reality. Learn to play, master techniques, and receive real-time feedback from an AI avatar in a 3D environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A collection of various musical instruments.
- **10 Floating Knowledge Portals** that include:
  - Images of instruments from around the world.
  - Text on the history and significance of each instrument.
  - Videos of maestros playing and sharing insights.
  - An AI Avatar instructing on instrument techniques.

3-D Model Integration:

- **Models**: Virtual instruments like guitars, pianos, violins, and more.
- **Illustrative Example**: A 3-D model of a grand piano.
- **Editing Option**: Modify instrument settings and sounds.
- **Personal Integration**: Upload your own instrument samples.

Annotations for the 3-D Model:

- Annotations detailing instrument parts and their significance.
- IntelliScan to break down and analyze complex instrument techniques.
- Option to add personal annotations for further insights.

Automatic Assessment Creation:

- Quizzes on instrument history, musical scales, and playing techniques.
- Identify different instruments and their sounds.

AI Generated Universal Skill Simulator:

- Simulations of instrument playing sessions, focusing on technique.
- Demonstrations on scales, chords, and playing styles.

Interactive Simulation Scenarios:

- Scenarios such as band practices, solo performances, and concerts.
- Create your own practice routines and challenges.

Incident Simulation:

- Handling broken strings, tuning issues, or playing mishaps.
- Techniques for quick fixes and improvisations.

Sound Design for Multimedia in AR

Course Summary: Using Augmented Reality, delve into the world of sound design tailored for multimedia. Learn to create, modify, and integrate soundscapes for various media platforms with real-world guidance.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A scene from a multimedia project with layered sounds.
- **10 Floating Knowledge Portals** that include:
  - Images from renowned sound design projects.
  - Text on the evolution and importance of sound in multimedia.
  - Videos of sound designers sharing their expertise.
  - An AI Avatar explaining the sound design process.

3-D Model Integration:

- **Models**: Virtual sound equipment, mixers, and multimedia platforms.
- **Illustrative Example**: A 3-D model of a film sound setup.
- **Editing Option**: Customize sound layers and effects.
- **Personal Integration**: Integrate your sound projects for editing.

Annotations for the 3-D Model:

- Annotations detailing the nuances of sound design techniques.
- IntelliScan feature for soundwave analysis and modification.
- Add personal notes and insights to your sound designs.

Automatic Assessment Creation:

- Quizzes on sound theory, effects, and multimedia sound techniques.
- Identify different sound design elements in given clips.

AI Generated Universal Skill Simulator:

- Simulations on sound layering, effect addition, and multimedia syncing.
- Demonstrations on soundscapes and ambiances.

Interactive Simulation Scenarios:

- Real-life scenarios like game sound design or film sound integration.
- Design sound challenges for different media platforms.

Incident Simulation:

- Managing challenges like sound distortions or syncing issues.
- Strategies to tackle real-time sound design problems.

Faculty of Mass Communication Technology

Journalism and Media Production

Virtual Reality Journalism Techniques

Course Summary: Experience the future of journalism with Virtual Reality (VR). Learn how to narrate stories, conduct immersive interviews, and capture the essence of events in a 3D environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A journalist with VR equipment amidst a bustling city.
- **10 Floating Knowledge Portals** that include:
    - Images of significant news events covered in VR.
    - Text on the evolution and impact of VR in journalism.
    - Videos of leading journalists discussing VR techniques.

- An AI Avatar guiding users through the nuances of VR journalism.

3-D Model Integration:

- **Models**: Virtual news studios, VR cameras, and live reporting scenes.
- **Illustrative Example**: A 3-D model of a war correspondent in action.
- **Editing Option**: Explore different VR storytelling techniques.
- **Personal Integration**: Integrate your own news reports or interviews.

Annotations for the 3-D Model:

- Annotations highlighting VR tools and their significance in journalism.
- IntelliScan to analyze and explain the impact of VR in news reporting.
- Add personal notes about your VR journalism experiences.

Automatic Assessment Creation:

- Quizzes on VR journalism history, prominent VR news stories, and tech advancements.
- Identify key components of a VR newsroom or a live VR news report.

AI Generated Universal Skill Simulator:

- Simulation of VR news reporting, interviews, and storytelling.
- Demonstrations of capturing events in real-time using VR.

Interactive Simulation Scenarios:

- Real-life scenarios such as covering live events, breaking news, or interviews.
- Create your own VR news scenarios for deeper understanding.

Incident Simulation:

- Managing challenges like tech failures or on-the-ground reporting hindrances.
- Strategies for real-time troubleshooting in VR journalism.

Broadcast Production and Editing in VR

Course Summary: Dive into the world of broadcast production using Virtual Reality. Understand the intricacies of shooting, producing, and editing content in a fully immersive VR environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A VR studio setup ready for a live broadcast.
- **10 Floating Knowledge Portals** that include:
    - Images from state-of-the-art broadcast studios.
    - Text on the transformative role of VR in broadcasting.
    - Videos of producers and editors explaining VR techniques.
    - An AI Avatar elucidating the VR broadcasting process.

3-D Model Integration:

- **Models**: Virtual broadcast studios, VR cameras, editing suites, and more.
- **Illustrative Example**: A 3-D model of a live sports broadcast.
- **Editing Option**: Experiment with different camera angles and VR effects.
- **Personal Integration**: Bring in your own broadcast clips for VR editing.

Annotations for the 3-D Model:

- Annotations spotlighting VR broadcast tools and techniques.
- IntelliScan feature to deconstruct and discuss a VR broadcast session.
- Option to add insights and tips on VR broadcasting.

Automatic Assessment Creation:

- Quizzes on the history of VR broadcasting, technological milestones, and editing techniques.
- Identify aspects of a VR broadcast studio setup or post-production process.

AI Generated Universal Skill Simulator:

- Simulation of a VR broadcast session from shooting to final editing.
- Demonstrations on layering, transitions, and special effects in VR.

Interactive Simulation Scenarios:

- Scenarios like producing a live event, sports broadcasting, or entertainment shows.
- Manual simulation creation for unique broadcasting experiments.

Incident Simulation:

- Handling issues like live broadcast interruptions or VR equipment malfunctions.
- Tactics for instant decision-making during live VR broadcasts.

Media Ethics and Law in AR

Course Summary: Navigate the realm of media ethics and law with the power of Augmented Reality (AR). Delve deep into case studies, media guidelines, and legal scenarios enhanced by AR overlays.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A courtroom with AR annotations showing different media cases.
- **10 Floating Knowledge Portals** that include:
    - Images of prominent media legal battles.
    - Text on landmark media ethics guidelines and legal rulings.
    - Videos of legal experts discussing media laws.
    - An AI Avatar directing users through the intricacies of media ethics and law.

3-D Model Integration:

- **Models**: Virtual courtrooms, newsrooms, and real-life case studies.
- **Illustrative Example**: A 3-D model of a journalist facing a legal hearing.
- **Editing Option**: Explore various media ethics scenarios in AR.
- **Personal Integration**: Integrate your own media ethics cases or dilemmas.

Annotations for the 3-D Model:

- Annotations emphasizing pivotal media ethics principles and legal judgments.
- IntelliScan to analyze and debate various media ethics cases.
- Add your personal interpretations or experiences related to media law.

Automatic Assessment Creation:

- Quizzes on historical media law cases, ethical guidelines, and AR's role in understanding them.
- Identify key figures or events in media law through AR overlays.

AI Generated Universal Skill Simulator:

- Simulation of ethical dilemmas faced by journalists, producers, and media houses.
- Demonstrations of how media laws have shaped reporting and production.

Interactive Simulation Scenarios:

- Real-life scenarios like covering sensitive news topics or facing legal challenges.
- Design your AR scenarios to debate or discuss specific media ethics cases.

Incident Simulation:

- Managing challenges related to legal breaches or ethical violations in media.
- Decision-making simulations when confronting ethical or legal dilemmas in media.

Faculty of Marine Technology

Naval Architecture and Marine Systems

Ship Design and Hydrodynamics in VR

Course Summary: Embark on a VR journey into ship design and hydrodynamics. Understand naval architecture, dive into fluid dynamics, and explore cutting-edge ship designs in an immersive 3D marine environment guided by an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A large ship slicing through vast ocean waters.
- **10 Floating Knowledge Portals** that include:
    - Images of iconic ship designs through history.
    - Text detailing the principles of hydrodynamics.
    - Videos from leading naval architects and marine engineers.
    - An AI Avatar elucidating intricate ship design processes.

3-D Model Integration:

- **Models**: Virtual ship designs, wave patterns, and fluid simulations.
- **Illustrative Example**: A 3-D model of a cutting-edge cruise liner.
- **Editing Option**: Modify hull designs and hydrodynamic flow.
- **Personal Integration**: Integrate your ship design concepts.

Annotations for the 3-D Model:

- Annotations describing ship components and hydrodynamic principles.
- IntelliScan feature for detailed analysis of ship-water interaction.
- Manual annotation feature for personalized notes.

Automatic Assessment Creation:

- Quizzes on naval history, ship design evolution, and hydrodynamic principles.
- Identify key components and principles in ship design scenarios.

AI Generated Universal Skill Simulator:

- Simulations of water flow around ship hulls.
- Demonstrations of how hydrodynamic forces act on vessels.

Interactive Simulation Scenarios:

- Real-life scenarios such as ships navigating through rough seas.
- Manual simulation creation of hydrodynamic experiments.

Incident Simulation:

- Addressing challenges like hull breaches or navigating stormy waters.
- Strategies for real-time hydrodynamic challenges.

Offshore Engineering and Drilling

Course Summary: Dive deep into the realms of offshore engineering using advanced simulation tools. Learn about offshore drilling techniques, platform designs, and oil extraction methodologies in a virtual environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: An offshore drilling platform against a sunset horizon.
- **10 Floating Knowledge Portals** that include:
  - Images of various offshore structures and rigs.
  - Text about the challenges and rewards of offshore engineering.
  - Videos from offshore experts discussing drilling techniques.
  - An AI Avatar detailing the offshore drilling process.

3-D Model Integration:

- **Models**: Virtual offshore platforms, underwater pipelines, and drilling rigs.
- **Illustrative Example**: A 3-D model of a deep-sea drilling rig.
- **Editing Option**: Customize platform structures and drilling equipment.
- **Personal Integration**: Incorporate your innovative engineering designs.

Annotations for the 3-D Model:

- Annotations highlighting key components of an offshore platform.
- IntelliScan for in-depth insights into drilling mechanisms.
- User-driven annotations for personalized insights.

Automatic Assessment Creation:

- Quizzes on offshore engineering history, platform types, and drilling techniques.
- Locate and identify components on a virtual offshore platform.

AI Generated Universal Skill Simulator:

- Simulations of drilling operations and platform stabilization.
- Demonstrations of emergency protocols on offshore rigs.

Interactive Simulation Scenarios:

- Real-life scenarios like managing oil spills or platform evacuations.
- User-driven simulations of hypothetical offshore challenges.

Incident Simulation:

- Handling emergencies like rig fires or pipeline breaches.
- Crisis management strategies for offshore incidents.

Marine Renewable Energy Systems in AR

Course Summary: Immerse yourself in Augmented Reality to discover the world of marine renewable energy. Explore tidal turbines, wave energy converters, and offshore wind farms, enhancing your real-world understanding of marine energy solutions.

Knowledge Portal with Floating Annotations:

- **Hero Image**: An offshore wind farm harnessing oceanic winds.
- **10 Floating Knowledge Portals** that include:
    - Images of various marine renewable energy systems.
    - Text about the potential and challenges of marine energy.
    - Videos of engineers discussing cutting-edge marine energy solutions.
    - An AI Avatar introducing various marine energy technologies.

3-D Model Integration:

- **Models**: Virtual tidal turbines, wave energy converters, and offshore wind turbines.
- **Illustrative Example**: A 3-D model of a tidal energy farm.
- **Editing Option**: Modify energy converter designs and placements.
- **Personal Integration**: Add your marine energy innovations.

Annotations for the 3-D Model:

- Annotations explaining the workings of marine energy converters.
- IntelliScan for in-depth examination of energy extraction processes.
- Add personal annotations based on individual insights.

Automatic Assessment Creation:

- Quizzes on the history of marine renewable energy, key technologies, and energy conversion principles.
- Identify various marine energy systems in diverse scenarios.

AI Generated Universal Skill Simulator:

- Simulations of energy conversion processes.
- Demonstrations of maintenance and repair of marine energy systems.

Interactive Simulation Scenarios:

- Real-life scenarios such as optimizing energy extraction in varying sea conditions.
- Manual simulations to create personalized marine energy experiments.

Incident Simulation:

- Addressing challenges like repairing damaged turbines or optimizing energy during storms.
- Best practices for ensuring safety and efficiency in marine energy operations.

Faculty of Integrated Technology

Environmental and Green Technologies

Sustainable Technologies in VR

Course Summary: Navigate the future of sustainable technologies with advanced VR techniques. Explore renewable energy sources, conservation methodologies, and innovative eco-friendly technologies in a comprehensive 3D environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A sprawling wind farm set against a serene sunset.
- **10 Floating Knowledge Portals** that include:
  - Images of various renewable energy installations.
  - Text detailing the evolution and significance of sustainable technologies.
  - Videos of pioneers in the field sharing insights.
  - An AI Avatar illustrating the workings and benefits of sustainable technologies.

3-D Model Integration:

- **Models**: Virtual solar panels, wind turbines, and other sustainable technologies.
- **Illustrative Example**: A 3-D model of an efficient solar panel installation.
- **Editing Option**: Examine the internals of a wind turbine.
- **Personal Integration**: Bring in your own sustainable tech designs.

Annotations for the 3-D Model:

- Annotations explaining sustainable tech components.
- IntelliScan feature to recognize and expand on renewable energy setups.
- Option for users to integrate their own annotations for insights.

Automatic Assessment Creation:

- Quizzes on renewable energy principles, historical advancements, and sustainability.
- Identify different renewable energy sources and their applications.

AI Generated Universal Skill Simulator:

- Simulations of setting up sustainable tech infrastructure.
- Demonstrations of maximizing efficiency in renewable energy sources.

Interactive Simulation Scenarios:

- Real-life scenarios such as establishing off-grid energy systems.
- Manual simulation creation focusing on sustainable technology challenges.

Incident Simulation:

- Managing challenges faced in sustainable tech setups.
- Best practices in troubleshooting renewable energy systems.

Waste Management and Recycling Techniques

Course Summary: Dive into the crucial domain of waste management using VR. Understand the significance, methods, and innovations in waste processing and recycling.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A modern recycling facility sorting different waste.
- **10 Floating Knowledge Portals** that include:
  - Images of various waste management facilities.
  - Text on the global waste crisis and recycling solutions.
  - Videos of experts sharing innovative waste processing techniques.
  - An AI Avatar guiding users through the waste management process.

3-D Model Integration:

- **Models**: Virtual landfill sites, recycling machines, and waste segregation setups.
- **Illustrative Example**: A 3-D model of an advanced waste sorting facility.
- **Editing Option**: Manipulate recycling processes.
- **Personal Integration**: Incorporate your own waste management ideas.

Annotations for the 3-D Model:

- Annotations detailing waste types and recycling methods.
- IntelliScan for understanding waste composition and recycling potential.
- Add user-specific insights through manual annotations.

Automatic Assessment Creation:

- Quizzes on waste types, recycling methods, and global waste impact.
- Identify various waste management and recycling systems.

AI Generated Universal Skill Simulator:

- Simulate waste sorting, recycling processes, and landfill management.
- Demonstrations on innovative recycling methods and machinery.

Interactive Simulation Scenarios:

- Real-life challenges like managing city waste during peak times.
- Manual creation of waste management scenarios for analysis.

Incident Simulation:

- Tackling sudden waste overflows or recycling machinery malfunctions.
- Strategies for optimizing waste management during crises.

Green Building Design and Construction in AR

Course Summary: Embrace the world of green architecture and eco-friendly construction using Augmented Reality. Learn design principles, materials, and construction techniques that prioritize sustainability.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A state-of-the-art green building with solar panels and vertical gardens.
- **10 Floating Knowledge Portals** that include:
  - Images from sustainable architectural marvels.
  - Text on the significance and evolution of green building design.
  - Videos from renowned architects explaining their sustainable designs.
  - An AI Avatar guiding users through eco-friendly construction processes.

3-D Model Integration:

- **Models**: A virtual sustainable building, green materials, and eco-friendly amenities.
- **Illustrative Example**: A 3-D model of a house with a living roof and rainwater harvesting.
- **Editing Option**: Modify designs to incorporate more green features.
- **Personal Integration**: Import your own sustainable building designs.

Annotations for the 3-D Model:

- Annotations detailing sustainable materials and design philosophies.
- IntelliScan to recognize and elaborate on green construction techniques.
- Integrate personal notes for custom insights.

Automatic Assessment Creation:

- Quizzes on green design principles, eco-friendly materials, and construction techniques.
- Identify key features of sustainable architecture.

AI Generated Universal Skill Simulator:

- Simulations of constructing green buildings and implementing sustainable systems.
- Demonstrations on the benefits of green designs and technologies.

Interactive Simulation Scenarios:

- Real-world situations such as creating an energy-efficient skyscraper.
- Manual simulations for green design challenges and solutions.

Incident Simulation:

- Addressing challenges like sourcing sustainable materials or ensuring energy efficiency.
- Strategies for achieving the highest sustainability standards in construction.

School of Energy, Environment, and Materials

Energy Systems and Environmental Engineering

Solar and Wind Energy Systems in VR

Course Summary: Embark on an immersive journey through Virtual Reality to understand the intricacies of solar and wind energy systems. Gain hands-on experience in understanding renewable energy sources, their mechanics, and their integration into the energy grid.

Knowledge Portal with Floating Annotations:

- **Hero Image**: Panoramic view of a wind turbine field with solar panels in the backdrop.
- **10 Floating Knowledge Portals** that include:
    - Images of various solar farms and wind turbine designs.
    - Text detailing the principles and mechanics of renewable energy sources.
    - Videos of experts explaining the future of renewable energy.
    - An AI Avatar introducing users to solar and wind energy components.

3-D Model Integration:

- **Models**: Virtual solar panels, wind turbines, and grid integration systems.
- **Illustrative Example**: A 3-D model of a solar-wind hybrid system.
- **Editing Option**: Explore different energy conversion mechanisms.
- **Personal Integration**: Integrate designs of localized renewable energy systems.

Annotations for the 3-D Model:

- Annotations highlighting different components of the energy systems.
- IntelliScan feature identifying and explaining energy conversion processes.
- Option for user-specific notes on energy efficiency and design.

Automatic Assessment Creation:

- Quizzes on renewable energy concepts, grid integration, and energy storage.
- Identify key components of solar panels and wind turbines.

AI Generated Universal Skill Simulator:

- Simulation of solar panel installation and wind turbine maintenance.
- Demonstrations on optimizing energy capture and storage.

Interactive Simulation Scenarios:

- Real-life scenarios like dealing with low sunlight or low wind situations.
- Manual simulation creation for hypothetical energy challenges.

Incident Simulation:

- Addressing challenges such as grid overloads or equipment malfunctions.
- Efficient management of renewable energy sources during environmental changes.

Environmental Monitoring and Assessment

Course Summary: Delve into the world of environmental monitoring using VR. Study ecosystems, assess environmental impacts, and understand the importance of sustainable practices in preserving our planet.

Knowledge Portal with Floating Annotations:

- **Hero Image**: Drone view of a dense forest ecosystem.
- **10 Floating Knowledge Portals** that include:
  - Images of diverse ecosystems around the world.
  - Text on environmental assessment techniques and metrics.
  - Videos of ecologists sharing their field experiences.
  - An AI Avatar guiding users through environmental monitoring processes.

3-D Model Integration:

- **Models**: Virtual ecosystems, flora and fauna, and monitoring equipment.
- **Illustrative Example**: A 3-D model of a rainforest ecosystem.
- **Editing Option**: Manipulate environmental factors to study their impacts.
- **Personal Integration**: Import data from real-world monitoring activities.

Annotations for the 3-D Model:

- Annotations explaining different ecosystems and their dynamics.
- IntelliScan feature identifying species and assessing their health.
- Option for users to add notes based on their observations.

Automatic Assessment Creation:

- Quizzes on ecosystem types, environmental metrics, and monitoring techniques.
- Identify flora and fauna and determine their ecological roles.

AI Generated Universal Skill Simulator:

- Simulation of environmental data collection and assessment processes.
- Demonstrations of various environmental monitoring equipment.

Interactive Simulation Scenarios:

- Real-life scenarios such as impact assessments after natural disasters.
- Manual creation of scenarios for ecosystem restoration projects.

Incident Simulation:

- Handling challenges like species decline or habitat destruction.
- Formulating strategies for environmental conservation.

Advanced Materials for Energy Storage in AR

Course Summary: Dive into the realm of Augmented Reality to explore the latest advancements in materials used for energy storage. Grasp the molecular structures, properties, and applications of these materials in real-world settings.

Knowledge Portal with Floating Annotations:

- **Hero Image**: Visualization of a lithium-ion battery's internal structure.
- **10 Floating Knowledge Portals** that include:
  - Images of various energy storage systems and materials.
  - Text detailing the science behind advanced energy storage materials.
  - Videos of scientists discussing breakthroughs in energy storage.
  - An AI Avatar explaining the materials' properties and applications.

3-D Model Integration:

- **Models**: Virtual molecular structures, batteries, capacitors, and more.
- **Illustrative Example**: A 3-D model of a graphene-based supercapacitor.
- **Editing Option**: Experiment with different material combinations.
- **Personal Integration**: Integrate research data or designs for new materials.

Annotations for the 3-D Model:

- Annotations detailing properties and applications of materials.
- IntelliScan feature identifying molecular structures and their characteristics.
- Option to add notes on material research and innovations.

Automatic Assessment Creation:

- Quizzes on material properties, energy storage principles, and innovations.
- Identify different materials and their roles in energy storage.

AI Generated Universal Skill Simulator:

- Simulations demonstrating how materials react under different conditions.
- Demonstrations on optimizing material properties for maximum energy storage.

Interactive Simulation Scenarios:

- Real-life scenarios like rapid charging or high-temperature operations.
- Manual simulations of experimental setups for material testing.

Incident Simulation:

- Addressing challenges such as material degradation or energy leakage.
- Developing strategies for enhancing material longevity and efficiency.

College of Multidisciplinary Studies

Interdisciplinary Sciences and Arts

Innovation and Creativity in VR

Course Summary: Dive into the limitless realm of Virtual Reality (VR) to understand and harness innovation and creativity. Engage in a series of immersive workshops, challenges, and experiences that aim to unlock your creative potential.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A 3D brainstorming room with various innovative designs floating around.
- **10 Floating Knowledge Portals** that include:
  - Images of groundbreaking innovations.
  - Text on the history and theory of creativity.
  - Videos of innovators sharing their journey.
  - An AI Avatar guiding users through brainstorming techniques in VR.

3-D Model Integration:

- **Models**: Virtual innovation labs, prototypes, and collaborative spaces.
- **Illustrative Example**: A 3-D model of a state-of-the-art VR creative lab.
- **Editing Option**: Develop and modify your creative designs.
- **Personal Integration**: Integrate your own innovative designs or models.

Annotations for the 3-D Model:

- Annotations on various innovation tools and techniques.
- IntelliScan for deep-diving into renowned creative works.

- Option to add personal notes and creative insights.

Automatic Assessment Creation:

- Quizzes on different innovation theories, methodologies, and case studies.
- Identify and critique innovative designs.

AI Generated Universal Skill Simulator:

- Simulation of creative workshops and innovative design challenges.
- Demonstrations of the ideation and prototyping processes.

Interactive Simulation Scenarios:

- Scenarios such as innovation hackathons, collaborative brainstorming, and product design challenges.
- Create your own innovation challenges for peer reviews.

Incident Simulation:

- Address challenges faced during the innovation process.
- Strategies for refining and evolving ideas.

Global Challenges and Sustainable Solutions

Course Summary: Use Virtual Reality to gain profound insights into global challenges and their sustainable solutions. Explore various challenges our world faces and learn about innovative and effective solutions in an immersive environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A globe highlighting regions facing significant challenges.
- **10 Floating Knowledge Portals** that include:
    - Images of various global challenges.
    - Text detailing sustainable solutions.
    - Videos of experts discussing potential remedies.
    - An AI Avatar elaborating on global challenges and their solutions.

3-D Model Integration:

- **Models**: Virtual representations of global challenges like deforestation, melting ice caps, and polluted cities.

- **Illustrative Example**: A 3-D model of a sustainable urban development.
- **Editing Option**: Dive deep into solutions and customize them.
- **Personal Integration**: Import data or case studies for deeper analysis.

Annotations for the 3-D Model:

- Annotations explaining different sustainable solutions.
- IntelliScan to provide insights into global challenges.
- Option to add personal insights and observations.

Automatic Assessment Creation:

- Quizzes on global challenges, their causes, and sustainable solutions.
- Analyze and identify effective solutions for various challenges.

AI Generated Universal Skill Simulator:

- Simulation of sustainable practices.
- Demonstrations of implementing solutions in virtual environments.

Interactive Simulation Scenarios:

- Scenarios such as sustainable farming, renewable energy setups, and conservation efforts.
- Design and simulate your own sustainable solutions.

Incident Simulation:

- Addressing sudden challenges in implementing sustainable solutions.
- Crisis management in real-time situations.

Art and Science Collaborations in AR

Course Summary: Step into the world of Augmented Reality (AR) and witness the magical confluence of art and science. Discover how these seemingly diverse fields collaborate to create wonders in the realms of design, technology, and more.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A 3D hologram showcasing an art installation powered by science.
- **10 Floating Knowledge Portals** that include:
    - Images of renowned art-science collaborations.

- Text on the history and theory of such partnerships.
- Videos of artists and scientists discussing their joint projects.
- An AI Avatar explaining the interplay between art and science.

3-D Model Integration:

- **Models**: Virtual installations, science-inspired artworks, and interactive designs.
- **Illustrative Example**: A 3-D model of a kinetic sculpture based on scientific principles.
- **Editing Option**: Modify and play with art designs based on scientific data.
- **Personal Integration**: Integrate your own art-science projects.

Annotations for the 3-D Model:

- Annotations detailing the science behind various artworks.
- IntelliScan to explain the synergy between art and science.
- Option to add insights into your collaborative works.

Automatic Assessment Creation:

- Quizzes on iconic art-science collaborations, principles, and methodologies.
- Identify the scientific principles behind specific artworks.

AI Generated Universal Skill Simulator:

- Simulation of creating art based on scientific data.
- Demonstrations of real-time art-science projects.

Interactive Simulation Scenarios:

- Scenarios like creating art in space, underwater sculptures, and tech-powered installations.
- Design and visualize your own art-science collaborations.

Incident Simulation:

- Challenges faced during art-science projects.
- Strategies for merging creativity with scientific accuracy.

Research Center in Thin Film Physics

Thin Films and Coatings

Thin Film Deposition Techniques in VR

"Thin Film Deposition Techniques in VR" immerses learners in the world of deposition processes. Through interactive VR sessions, learners experience and practice operating deposition machinery, delve deep into various techniques, and face real-life scenarios and challenges guided by an AI avatar.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A captivating visual showcasing the equipment used in thin film deposition.
- **Floating Knowledge Portals**: Ten portals providing insights into various deposition techniques such as sputtering, thermal evaporation, and chemical vapor deposition.
    - **Images**: Detailed visuals of the deposition process and machinery.
    - **Text**: Information on the principles, advantages, and applications of each technique.
    - **Videos**: Real-time demonstrations of deposition techniques.
    - **AI Avatar**: An AI guide explaining each technique and providing a step-by-step walkthrough.

3-D Model Integration:

- **Model**: A 3-D representation of deposition chambers, tools, and machinery.
- **Placeholder**: If a specific model isn't available, images of deposition chambers will be used.
- **Illustrative example**: A 3-D model of a sputtering chamber.

Annotations for the 3-D Model:

- Floating annotations highlighting important components of the deposition machinery.
- IntelliScan feature will recognize specific parts and provide additional information.
- Users can add custom annotations (for an additional fee).

Assessment Creation:

- Quizzes that test knowledge on deposition techniques, equipment functionality, and applications.
- Jeopardy-style quiz focusing on historical and advanced deposition knowledge.

AI Generated Universal Skill Simulator:

- Virtual practice sessions on operating deposition equipment.
- AI avatar guiding users through standard operation procedures of deposition machines.

Interactive Simulation Scenarios:

- AI-driven scenarios showcasing challenges faced during the deposition process.
- Users can simulate specific deposition challenges using Eon Interact.

Incident Simulation:

- AI avatar presents potential incidents during the deposition process.
- Users are assessed on their response to these incidents.

Surface Analysis and Characterization

This course, powered by EON AI, delves into the intricate world of surface analysis, exploring advanced techniques from SEM to AFM. Through interactive 3D models, AI-guided simulations, and comprehensive assessments, learners gain a hands-on understanding of the principles and applications of surface characterization.

Knowledge Portal with Floating Annotations:

- Hero Image: Detailed electron micrograph of a surface under analysis.
- Knowledge Portals:
    - 10 floating annotations showcasing different techniques of surface analysis like XPS, SEM, TEM, AFM, etc.
    - Each portal contains:
        - Relevant images of equipment and surface morphology.
        - Text descriptions detailing the technique's principles and applications.
        - Videos demonstrating the equipment in action.
        - An AI Avatar explaining the nuances of each method and their real-world relevance.

3-D Model Integration:

- 3D models of key surface characterization equipment from EON's extensive library.
- A placeholder image for any equipment not available in 3D.
- Illustrative example: 3D model of an Atomic Force Microscope detailing its components.
- Option for users to import personal CAD models of specific equipment (additional fee).
- Future upgrade: Text to 3D conversion tool for turning descriptive text into models (2024 upgrade, additional fee).

Annotations for the 3-D Model:

- Floating annotations detailing each equipment's parts and their functionalities.
- IntelliScan feature available from Q1 2024 for image recognition-based annotations.
- Option for users to manually annotate parts and processes (additional fee).

Assessment Creation:

- Quizzes designed around equipment identification, method application, and data interpretation.
- Includes the standard drop menu, locate, identify, Jeopardy-style, and other future quizzes like drag and drop, matching, and true/false.

AI Generated Universal Skill Simulator:

- 3D animations showcasing standard procedures for each technique.
- The AI avatar guides users through processes such as sample preparation, equipment calibration, and data collection.
- Real-world example: Demonstrating the SEM imaging process and interpretation.

Interactive Simulation Scenarios:

- AI-generated real-life scenarios, such as troubleshooting equipment or interpreting challenging datasets.
- Users can manually create additional simulations using Eon Interact (additional fee).

Incident Simulation:

- AI avatar presents incidents related to surface analysis, such as contamination issues or equipment malfunctions.
- Users are assessed on their problem-solving skills.
- Incident simulations can be manually created (additional fee).

Photovoltaic Thin Film Technologies in AR

Harness the power of the sun through the lens of augmented reality. Dive deep into thin film solar technologies, from their production to their real-world applications. EON AI's immersive platform brings to life the intricacies of solar cell design, manufacturing, and performance, providing a comprehensive understanding of the future of clean energy.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A modern solar panel installation harnessing sunlight.
- **Knowledge Portals**:
  - 10 floating annotations highlighting different thin film technologies such as CdTe, CIGS, and amorphous silicon.
  - Each portal provides:
    - High-resolution images of the film structures.
    - Descriptive texts explaining their production and efficiency.
    - Videos showing their manufacturing and installation.
    - An AI Avatar detailing their advantages, disadvantages, and future prospects.

3-D Model Integration:

- 3D models of manufacturing equipment and solar cell designs from EON's library.
- Placeholder images for concepts or technologies not available in 3D.
- Illustrative example: A 3D model of a CIGS solar cell layer-by-layer.
- Option to import personal CAD models of specific solar technologies (additional fee).
- Future upgrade: Text to 3D tool allowing for in-depth layer visualization (2024 upgrade, additional fee).

Annotations for the 3-D Model:

- Detailed annotations explaining the function and significance of each solar cell layer.
- IntelliScan feature (from Q1 2024) for enhanced visual learning.
- Manual annotation addition option for further personalization (additional fee).

Assessment Creation:

- Quizzes on thin film types, production methods, efficiency metrics, and real-world applications.

- Varied quiz formats including locate, identify, Jeopardy-style, and other upcoming formats.

AI Generated Universal Skill Simulator:

- 3D animations explaining standard processes like thin film deposition, annealing, and performance testing.
- AI avatar supervision for enhanced learning.
- Example: Step-by-step CdTe thin film production.

Interactive Simulation Scenarios:

- AI-crafted scenarios, such as optimizing a manufacturing process for better efficiency.
- Manual scenario creation option using Eon Interact (additional fee).

Incident Simulation:

- AI avatar introduces incidents, like issues in the production line or efficiency drops.
- Assessments based on troubleshooting and solution-finding skills.
- Option for manual incident simulation (additional fee).

School of Anti-Aging and Regenerative Medicine

Anti-Aging Techniques and Medicine

Aging Mechanisms and Cellular Senescence in VR

Course Summary: Explore the detailed mechanisms of aging and delve into cellular senescence using immersive Virtual Reality. Understand the intricate processes at a cellular level in an unparalleled VR environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A close-up view of aging cells undergoing senescence.
- **10 Floating Knowledge Portals** that include:
    - Images of cells at various stages of aging.
    - Text about the biological and genetic theories of aging.
    - Videos explaining cellular senescence processes.
    - An AI Avatar discussing the impact of environmental factors on aging.

3-D Model Integration:

- **Models**: Virtual depictions of human cells, DNA structures, and more.
- **Illustrative Example**: A 3-D model showcasing the difference between youthful cells and aged cells.
- **Editing Option**: Examine cells at different stages of aging.
- **Personal Integration**: Upload microscopic images for in-depth analysis.

Annotations for the 3-D Model:

- Annotations explaining the cellular structures and their functions.
- IntelliScan for in-depth analysis of aging mechanisms.
- Manual annotation feature for personal research notes.

Automatic Assessment Creation:

- Quizzes on the biology of aging, genetic factors, and cellular processes.
- Identify cellular structures and their roles in aging.

AI Generated Universal Skill Simulator:

- Simulation of cellular replication and degeneration processes.
- Demonstrations depicting how cells react to various external stimuli.

Interactive Simulation Scenarios:

- Real-life scenarios like cells undergoing oxidative stress.
- Manual creation of scenarios to study specific cellular reactions.

Incident Simulation:

- Understanding anomalies like uncontrolled cellular growth.
- Delving into cellular mutations and their impact on aging.

Regenerative Medicine and Stem Cells

Course Summary: Venture into the world of regenerative medicine using VR. Understand stem cell mechanisms, their therapeutic potential, and the intricacies of tissue engineering in a comprehensive virtual environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A depiction of stem cells differentiating into various cell types.
- **10 Floating Knowledge Portals** that include:
    - Images of various stem cell types.
    - Text detailing the potential of regenerative medicine.
    - Videos of experts discussing breakthroughs in stem cell research.
    - An AI Avatar guiding through stem cell harvesting and utilization.

3-D Model Integration:

- **Models**: Virtual 3-D representations of stem cells, tissues, and organs.
- **Illustrative Example**: A 3-D model of bone marrow stem cells.
- **Editing Option**: Explore stem cell differentiation pathways.
- **Personal Integration**: Import experimental data for a tailored learning experience.

Annotations for the 3-D Model:

- Annotations detailing stem cell properties and capabilities.
- IntelliScan for understanding therapeutic applications.
- Add personal insights and research findings as annotations.

Automatic Assessment Creation:

- Quizzes on the types of stem cells, their sources, and applications.
- Identify processes like stem cell harvesting and transplantation.

AI Generated Universal Skill Simulator:

- Simulate the process of stem cell differentiation.
- Demonstrations on tissue regeneration and repair mechanisms.

Interactive Simulation Scenarios:

- Scenarios like stem cell transplantation in damaged tissues.
- Create specific simulations to study stem cell behaviors.

Incident Simulation:

- Understand challenges in stem cell therapies.
- Explore the ethics and controversies surrounding stem cell research.

Cosmetic Procedures and Dermatology in AR

Course Summary: Dive into the world of cosmetic procedures and dermatology using Augmented Reality. Understand skin anatomy, cosmetic treatments, and the latest advancements in dermatological care.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A detailed AR view of skin layers.
- **10 Floating Knowledge Portals** that include:
  - Images of various cosmetic procedures.
  - Text explaining skin conditions and their treatments.
  - Videos of dermatologists sharing insights on skin care.
  - An AI Avatar detailing various cosmetic procedures.

3-D Model Integration:

- **Models**: Augmented Reality models of skin layers, facial structures, and more.
- **Illustrative Example**: A 3-D model of a facial filler procedure.
- **Editing Option**: Examine different cosmetic treatments in AR.
- **Personal Integration**: Upload personal case studies for a tailored experience.

Annotations for the 3-D Model:

- Annotations explaining skin types, conditions, and treatments.
- IntelliScan for a detailed understanding of skin anatomy.
- Personalized annotation feature for custom insights.

Automatic Assessment Creation:

- Quizzes on skin diseases, treatments, and cosmetic procedures.
- Identify cosmetic tools and their correct usage.

AI Generated Universal Skill Simulator:

- Simulate cosmetic procedures like botox injections, facelifts, etc.
- Demonstrations on skin analysis and treatment suggestions.

Interactive Simulation Scenarios:

- Scenarios like performing a laser treatment or a chemical peel.
- Manual simulation creation to practice specific cosmetic procedures.

Incident Simulation:

- Addressing complications post-cosmetic procedures.
- Strategies for handling allergic reactions or unexpected results.

Faculty of Environmental Technology

Pollution Control and Waste Management

Air and Water Pollution Control in VR

This VR course dives deep into the world of air and water pollution control, providing interactive models, real-world scenarios, and expert-guided sessions to understand and tackle pollution effectively.

Knowledge Portal with Floating Annotations:
Explore the complex world of pollution control through a vibrant VR environment. A hero image showcases the detrimental effects of pollution, setting the tone for the course.

- **10 Floating Knowledge Portals**: Dive into detailed segments on sources of pollution, purification processes, the role of technology, global policies, and more.
- **Images**: Visualize real-life examples of polluted zones and their transformation after implementing control measures.
- **Text**: Deepen your understanding with insightful content curated by environmental experts.
- **Videos**: Witness pollution control methods in action.
- **AI Avatar**: An expert AI guide explains intricate processes, techniques, and strategies employed globally.

3-D Model Integration:

Engage with virtual models of water treatment plants, air purifiers, and other relevant equipment.

Annotations for the 3-D Model:

Interactive tags provide on-the-spot information, enhancing your understanding of each model's function and significance.

Assessment Creation:

Test your knowledge through various quizzes, ranging from identifying equipment to Jeopardy-style questions on global pollution statistics.

AI Generated Universal Skill Simulator:

Simulate real-life scenarios like operating a water treatment plant, ensuring you're ready for practical applications.

Interactive Simulation Scenarios:

Engage in real-life pollution control scenarios, understanding the challenges and decision-making processes.

Incident Simulation:

Face real-world challenges, from oil spills to chemical leaks, and learn the best strategies for immediate action.

Hazardous Waste Management and Disposal

Step into the crucial realm of hazardous waste, learning to manage, categorize, and dispose of dangerous substances safely and efficiently through immersive simulations and expert insights.

Knowledge Portal with Floating Annotations:
Venture into the crucial domain of hazardous waste management in an immersive VR setting. The hero image depicts hazardous waste's potential harm, guiding the course's narrative.

3-D Model Integration:

Familiarize yourself with disposal units, protective gear, and transportation mechanisms specific to hazardous waste.

Annotations for the 3-D Model:

Get real-time information on safety protocols and best practices, ensuring the utmost care when handling dangerous substances.

Assessment Creation:

Assess your knowledge on safety protocols, waste categorization, and more.

AI Generated Universal Skill Simulator:

Simulate a hazardous waste disposal operation, from categorizing waste to executing safe disposal methods.

Interactive Simulation Scenarios:

Experience situations like chemical leaks, requiring prompt decision-making and adherence to safety standards.

Incident Simulation:

Tackle scenarios of accidental spills or exposure, emphasizing the importance of swift and informed reactions.

Ecosystem Restoration and Conservation in AR

Journey through our planet's diverse ecosystems in augmented reality, understanding the significance of restoration and conservation, and actively participating in real-world restoration scenarios.

Knowledge Portal with Floating Annotations:
Embark on a journey through augmented reality, discovering the significance of ecosystem restoration and conservation. A compelling hero image underlines the beauty of our planet's diverse ecosystems.

3-D Model Integration:

Engage with AR models of various ecosystems, witnessing the transformation after restoration efforts.

Annotations for the 3-D Model:

Instantly access information on the flora and fauna of each ecosystem and their roles in maintaining ecological balance.

Assessment Creation:

Challenge your understanding of restoration methods, the importance of conservation, and the intricacies of various ecosystems.

AI Generated Universal Skill Simulator:

Engage in restoration activities, from replanting forests to rehabilitating aquatic habitats.

Interactive Simulation Scenarios:

Step into real-world conservation challenges, comprehending the complexity of restoring natural balance.

Incident Simulation:

Address urgent situations like forest fires, understanding the immediate actions required to mitigate damage.

School of Medicine

Medical Sciences and Clinical Studies

Pathophysiology and Disease Mechanisms in VR

Immerse yourself in the intricate world of pathophysiology using Virtual Reality. Understand the underlying mechanisms of diseases, from cellular reactions to system malfunctions, in a comprehensive 3D environment.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A 3D representation of a diseased cell or tissue.
- **10 Floating Knowledge Portals** that include:
    - Images of various diseases at a microscopic level.
    - Text about the evolution and understanding of pathophysiology.
    - Videos of experts discussing disease mechanisms.
    - An AI Avatar explaining complex pathophysiological processes.

3-D Model Integration:

- **Models**: 3D visuals of cells, tissues, and organ systems.
- **Illustrative Example**: A 3D model showcasing the progression of Alzheimer's disease.
- **Editing Option**: Zoom into specific cellular reactions or pathways.
- **Personal Integration**: Incorporate your own microscopic images or 3D models.

Annotations for the 3-D Model:

- Annotations detailing cellular processes and reactions.
- IntelliScan feature for in-depth tissue analysis.
- Option to manually annotate specific disease pathways.

Automatic Assessment Creation:

- Quizzes on common diseases, their symptoms, and underlying mechanisms.
- Identify and analyze disease progression in various scenarios.

AI Generated Universal Skill Simulator:

- Simulation of the body's reaction to diseases.
- Demonstrations on cellular malfunctions and system failures.

Interactive Simulation Scenarios:

- Real-life scenarios like the onset of diabetes or cardiovascular diseases.
- Create personalized disease progression scenarios.

Incident Simulation:

- Navigating complications arising from multiple co-existing diseases.
- Strategies to understand and handle complex pathophysiological incidents.

Clinical Diagnosis and Medical Imaging

With the aid of Augmented Reality, delve deep into clinical diagnostics and medical imaging. From X-rays to MRIs, understand diagnostic tools and their implications in a comprehensive AR setting.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A snapshot of an MRI machine in action.
- **10 Floating Knowledge Portals** that include:
    - Images of various diagnostic machines and results.
    - Text about the principles and advancements in medical imaging.
    - Videos of radiologists interpreting scans.
    - An AI Avatar guiding learners through diagnostic procedures.

3-D Model Integration:

- **Models**: 3D visuals of X-rays, MRIs, CT scans, and more.
- **Illustrative Example**: A 3D model of the brain seen through an MRI.
- **Editing Option**: View and manipulate medical images.
- **Personal Integration**: Import your own diagnostic images for analysis.

Annotations for the 3-D Model:

- Annotations explaining various anomalies seen in scans.
- IntelliScan feature for a detailed breakdown of medical images.
- Option to add personal notes or findings.

Automatic Assessment Creation:

- Quizzes on imaging techniques, diagnosis principles, and anomalies.
- Identify specific findings in various diagnostic images.

AI Generated Universal Skill Simulator:

- Simulation of operating diagnostic machines.
- Demonstrations on interpreting and diagnosing using medical images.

Interactive Simulation Scenarios:

- Real-life scenarios like emergency room diagnostics.
- Create personalized diagnostic scenarios based on given images.

Incident Simulation:

- Handling challenges like unclear images or conflicting diagnostics.
- Strategies for making accurate diagnoses under pressure.

Surgical Techniques and Procedures in AR

Master surgical techniques using Augmented Reality. Witness surgeries in real-time, learn about advanced surgical procedures, and get hands-on experience in a simulated AR operating room.

Knowledge Portal with Floating Annotations:

- **Hero Image**: A depiction of a surgeon performing a complex surgery.
- **10 Floating Knowledge Portals** that include:
    - Images of various surgeries and surgical instruments.

- Text detailing the history and advancements in surgery.
- Videos of renowned surgeons sharing their expertise.
- An AI Avatar instructing on different surgical techniques.

3-D Model Integration:

- **Models**: 3D representations of the human body, organs, and surgical instruments.
- **Illustrative Example**: A 3D model of a heart during bypass surgery.
- **Editing Option**: Manipulate and view surgical procedures from different angles.
- **Personal Integration**: Incorporate your own surgical videos or models.

Annotations for the 3-D Model:

- Annotations detailing surgical procedures step-by-step.
- IntelliScan for detailed organ and tissue analysis during surgery.
- Add personal annotations based on specific surgical experiences.

Automatic Assessment Creation:

- Quizzes on surgical history, types of surgeries, and surgical tools.
- Identify organs or instruments in given surgical scenarios.

AI Generated Universal Skill Simulator:

- Simulation of performing surgeries.
- Demonstrations on using various surgical tools and techniques.

Interactive Simulation Scenarios:

- Real-life scenarios like emergency surgeries or rare surgical procedures.
- Create custom surgical scenarios for practice and analysis.

Incident Simulation:

- Handling challenges like surgical complications or unexpected findings.
- Strategies for navigating complex surgical dilemmas.