

# XR Project Showcase 2025



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# Benefits of training through our simulators

Our aim is to provide an immersive VR nursing simulator, enhancing assessment techniques to effectively employ dental nursing professionals.

## True Assessment

The VR simulation provides a realistic set of scenarios involving factors such as patient presence, dentist's expectations and different types of requirements which helps in assessing whether the candidate can work well under pressure.

## Detailed Performance Reports and Personalized Feedback

After each training scenario, the VR system generates a comprehensive report detailing the user's performance, including a total score and time stamps for each task completed. Traditional training methods typically do not record individual performances, making our solution more personalized and allowing for targeted improvements based on specific feedback.

## Cost-Effective and Scalable

The training is more cost-effective than traditional methods, reducing the need for physical materials and setup costs. It also allows for easy scaling and repetition of training sessions, ensuring that all staff receive consistent and thorough training and are precisely assessed.



# Fire Safety & CPR Training Simulator for London North Eastern Railways (LNER)

## Current Challenges:

Effective fire safety training is crucial for railway staff, yet traditional training methods often fail to provide a realistic and immersive experience. This leads to inadequate preparedness and response during actual fire emergencies. Modern railway environments are complex, with various fire hazards and safety protocols, posing significant challenges for comprehensive training.

## Project Goals:

Create a VR fire safety training simulator to address these gaps by offering a realistic, interactive, and risk-free training environment, enhancing the preparedness and response capabilities of railway staff."



# Key Feature

The controllers are calibrated and setup in a physical extinguisher prop. This helps in simulating the weight and haptics that the user must be familiarized with before considering himself prepared for emergency situations.

The interactions are also kept close to reality since the user does not need to directly interact with the controllers. Once the controllers are set up in the prop, the user can simply squeeze the lever of the extinguisher, as he would in a real life situation, and he will see the feedback being reflected in the experience



# Training Modules

Currently featuring three foundational modules, this solution serves as a tool for learning types of fires and extinguisher usage, extinguishing on-site fire in train and CPR training.



# How Virtual Reality could help?

Our aim is to provide an immersive VR fire safety training simulator, enhancing railway staff's ability to effectively manage fire emergencies according to the SoPs of LNER in various scenarios.

## SoPs in Different Locations

The VR simulation provides a realistic set of scenarios involving external factors such as passenger presence, different types of fire and on-site equipments such as emergency hammer, etc. This exposure helps individuals **develop flexibility, adaptability, and problem-solving skills**, preparing them for real-world challenges.

## Detailed Performance Reports and Personalized Feedback

After each training scenario, the VR system generates a comprehensive report detailing the user's performance, including a total score and time stamps for each task completed. Traditional training methods typically do not record individual performances, making our solution more personalized and allowing for targeted improvements based on specific feedback.

## Cost-Effective and Scalable

The training is more cost-effective than traditional methods, reducing the need for physical materials, travel, and setup costs. It also allows for easy scaling and repetition of training sessions, ensuring that all staff receive consistent and thorough fire safety training.



# Dental Nursing Simulator for Aspiration Clinic, UK

## Current Challenges:

- The dental industry faces a significant challenge in ensuring that aspiring dental nurses possess the necessary skills and knowledge to provide high-quality patient care.
- Traditional training methods lack the immersive, hands-on experience needed to fully prepare individuals for the demands of the job.
- Evaluating the competency of candidates in a consistent and thorough manner is difficult, leading to variability in skill levels of certified dental nurses.

## Project goal:

To address these issues by offering a comprehensive, interactive training platform that accurately assesses and enhances the capabilities of aspiring dental nurses, ensuring they are fully prepared for real-world scenarios.



# Training Modules

The simulator is divided into 4 modules according to the project requirements.

The modules were based on:

1. Root Canal Treatment
2. Exam, Scale Polish
3. Surgical Extraction
4. Amalgam Restoration

Additionally the experience is also Available to operate on PC.

This dual-platform approach ensures that the Dental Nursing Simulator can be easily accessed and utilized across various devices, making it versatile and adaptable to different training environments.



## DENTAL NURSE TRAINING

Name

Email ID

Log In

Exit



# SU-30 Maintenance and Daily Inspection Check Procedure Training for HUL & Indian Air Force

There are numerous challenges in providing consistent, high-quality training for inspection checks on aircraft.

- **Unpredictable Aircraft Availability:** Real aircraft models are often unavailable due to operational demands, maintenance, and weather.
- **Inconsistent Training Access:** Limited access delays hands-on practice, impacting trainee skill development.
- **Resource Constraints:** Limited training slots hinder efficient learning for all trainees.
- **Need for Standardized Training:** A need to ensure consistent, high-quality skill development across trainees with personalised progress tracking.

Our MVP:

An immersive VR-based training platform that replicates the complete daily inspection and maintenance process of the Sukhoi Su-30MKI. Paired with a powerful trainer dashboard, the solution delivers a blended approach of guided learning, independent execution, and performance assessment—ensuring trainees are mission-ready without risking real-world equipment.



# Effective Ecosystem for Trainer & Trainees

- Dual-Interface System
  1. Admin Dashboard – Trainers can:
    - Assign training modules & chapters with due dates
    - Monitor trainee progress in real time
    - Generate individual session performance reports
  2. VR Trainee Experience – Trainees select assigned modules via in-VR UI
- Three Training Modes:
  1. Guided – Step-by-step instructional UI for structured learning
  2. Unguided – Realistic free-flow execution without UI prompts
  3. Assessment – Formal evaluation mode with auto-generated reports to trainers



# How Virtual Reality could help?

## Standardised Training

Delivers uniform procedures to every trainee, reducing human error and ensuring compliance with official SOPs.

## Realistic Readiness

Unguided and assessment modes simulate real-time decision-making and operational pressure.

## Data-Driven Evaluation

Performance reports provide measurable insights into skill gaps and progress over time.

## Adaptive Learning Paths

Trainers can assign customised modules and due dates based on individual needs.

## Safe & Cost-Effective

Eliminates wear and tear on actual aircraft during practice, saving resources and reducing downtime.





# Virtual Reality Pathway to Inclusive Employment for People with Autism



## Current Challenges:

People with autism bring valuable strengths to the workplace but often face discrimination, leading to poor employment outcomes. Modern workplaces are complex and filled with social nuances, posing significant challenges and stress for autistic individuals.

## Project goal:

Create a solution that aids in bridging the gap between neurodivergent individuals and their professional surroundings. Utilise Virtual Reality to address current challenges, ensuring successful adaptation to workplace demands and the development of necessary skills.

# How Virtual Reality could help?

Our Virtual Reality solution aims to empower individuals with autism by **providing an immersive experience tailored to the challenges** they may face when entering the workforce.

## Social Communication Challenges

The VR simulation provides a controlled and immersive environment where individuals can practice and improve their social communication skills. This includes understanding body language, interpreting facial expressions, and refining conversational abilities.

## Anxiety in Unfamiliar Environments

Through realistic and interactive simulations, the VR solution provides a safe space for users to familiarise themselves with unfamiliar settings. The interactive nature of the solution enables users to encounter a range of scenarios, including unexpected ones. This exposure helps individuals develop flexibility, adaptability, and problem-solving skills, preparing them for real-world challenges.

## Sensory Sensitivities

The simulation helps users to adjust with the sensory elements within the simulated environments, helping individuals gradually acclimate to various sensory stimuli. This feature will aid in desensitisation and prepare them for real-world workplace settings.

# Training Modules

Currently featuring three foundational modules, this solution serves as a tool for honing conversational skills, instilling confidence, and offering a comprehensive understanding of what to expect in a professional environment.

Before we explore the office, let's go over your induction pack. Please come with me to the private glass office.



## Job Interview Module

This offers users a dynamic simulation of the entire interview process, guiding them through interactions with the receptionist, waiting for the interview, and participating in the interview itself. Users can practise conversational skills, learn to articulate strengths, and understand effective communication of their needs. By providing insights into potential responses and reactions, this module fosters a sense of preparedness and confidence for real-world job interviews.



# First Day at Office Module

In this module, users embark on a virtual journey through key moments of starting a new job. From interactions with the receptionist to meeting the manager, touring the office, and getting acquainted with the team, users experience a simulated first day. The module includes a virtual exploration of quiet spaces, allowing users to take breaks if needed, and offers insights into a typical first-day schedule, providing a valuable resource for individuals looking to acclimate smoothly to a new workplace.



## Canteen Module

Recognizing the significance of social skills in professional settings, the canteen module focuses on providing a platform for users to practice and refine their social interactions. Users can engage in virtual social situations, practice grounding techniques, and build confidence in navigating the social dynamics of a common office space. This module plays a crucial role in enhancing communication skills and fostering a sense of inclusion, vital for successful integration into the workplace community.



# Capturing Life-like characters



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