

A person wearing a white VR headset and holding two white VR controllers, standing outdoors in a snowy environment. The person is wearing a dark green hoodie over a grey shirt. The background is a blurred, snowy landscape with bare trees.

FALL ASSESSMENT VR SIMULATION

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THE PROBLEM WE ARE SOLVING

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- **Developing a Virtual Reality Home Simulation for Occupational Therapy (OT) students To Perform FALL ASSESSMENT.**
 - **Aims to simulate real-world home environments like bedrooms, bathrooms, and kitchens.**
 - **Students can identify hazards, test modifications, and practice safety assessments in VR.**
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What Is Fall Assessment & What Does OT Do?

- Fall Assessment: Process of identifying potential hazards in a person's home that could cause falls or injuries.
- Occupational Therapists (OTs): Professionals who help individuals live independently by adapting their surroundings and daily routines.
- OT students learn to evaluate safety, accessibility, and ergonomics in home settings

PROBLEM IN CURRENT METHOD

- Students mostly assess documents and images showing home interiors.
- Lack of spatial awareness — cannot move or interact with the environment.
- Limited real-world exposure before field placements.
- Learning feels theoretical rather than hands-on.

OUR PROPOSED SOLUTION



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- Building an interactive 360 virtual home using Unity 3D, Insta 360 X4, and Meta Quest 3.
- Students can walk, look, grab, and interact with real-life objects in VR.
- Built-in hazard identification and feedback system for self-learning.
- Designed with guidance from OT faculty to reflect real-world conditions.

DEVELOPMENT APPROACH



Tools Used: Unity 3D, XR Interaction Toolkit, Meta Quest 3.

Process:

Identified key learning gaps with faculty.

Generate a 360 degree virtual tour using insta 360 x4.

Added interactive objects and visual cues.

Testing with faculty and improving visuals & usability.

Next Steps: Add scoring and performance tracking features.

BENEFITS TO STUDENTS

- Provides immersive, hands-on learning instead of passive reading.
 - Builds confidence before clinical placements.
 - Allows safe practice — no risk to real patients.
 - Enables anytime, repeatable learning in the lab.
 - Encourages critical thinking and decision-making.
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THANK YOU

