

MediVR

April 2022

Our Vision

To ensure better patient outcomes by redefining medical training globally.

Our Mission

Leading the way for new medical simulation training, by empowering medical professionals to create and practice with realistic patient scenarios at scale.



Reimagine Healthcare Education with MediVR

Believing that improving healthcare education is essential in today's world, we aim to deliver world class medical training while reducing cost, time with our core scenario generator engine.

Platform to empower users to create medical training scenarios



Artificial Intelligence



AR/VR Ready



Multidisciplinary



Data Analytics



Benefits

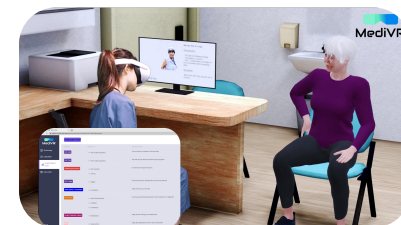
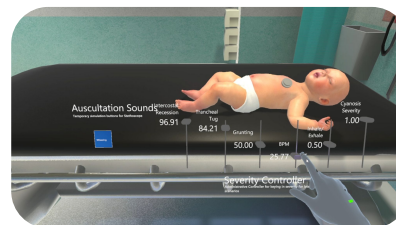
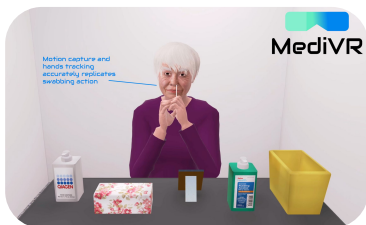
- 1 | **Up to 95%** time savings in creating scenarios
- 2 | **10x** more scenarios per disease
- 3 | **>90%** response accuracy
- 4 | **80%** agree that program is beneficial for learning

*Based on 40 user tests conducted on year 1-5 medical students



Dr Gabriel Liu
Head & Senior
Consultant
NUH Spine Centre

4 Product Lines *catered to different learning needs of Medical Practitioners*



	Experiential	Interdisciplinary Training	Real-time Controller	Assessment
Benefits	Learn through observation of anatomy, pathology and clinical procedures in volumetric 3D	Collaborative / Multidisciplinary Interact with medical objects, colleagues, professions and physicians anytime anywhere	Customize parameters of the scenario in real time, on top of pre-set scenarios (Control patient vitals and symptoms, trigger events)	Standardise and reduce assessor bias with objective data analytics Track user improvement over time and recommend improvements
Use Case	COVID ART SWAB	Orthopaedics, Paediatrics	ClinicAI, Paediatrics, Teleflex	Orthopaedics History Taking

Product 1 Experiential Use case

Background/Challenge:

Client faced challenges such as:

- Resource Intensive
- Difficulty in visualizing medical spatial relationships
- Existing tools lack fidelity (visual, audio)

Objective/Solution:

Self-directed learning with enhanced visualization technology:

- Digital library of real-world medical images, cases, lectures
- Volumetric 3D mixed reality
- Reinforce intricate interactions



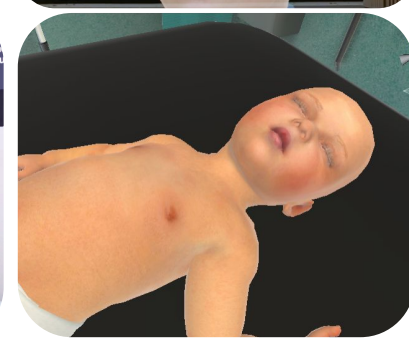
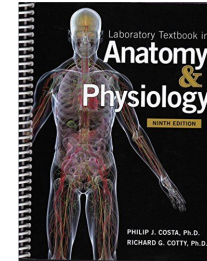
Reduction in training cost:

Cadavers and Manikins cost \$1,000-\$50,000- cost can be used to create >100 scenarios



Reinforce understanding:

VR improves test scores in memory retention of anatomy and medical procedures



Product 2 Interdisciplinary Training Use case

Background/Challenge:

Client faced challenges such as:

- Logistical challenge
- Scheduling across interdisciplinary teams
- Reduced Face-to-face simulation simulations

Objective/Solution:

Collaborate in real time for a meaningful learning experience:

- Remove geographical barriers
- Reduced cost
- Improve teamwork, confidence, competence



Increased clinical outcomes:

Increased Knowledge;
Higher non-technical skills;
Higher clinical tasks success rate;
Task time improvement



Pandemic Proof:

Decentralize classroom as center of learning - move away from defined learning places to learning spaces



Product 3 Real-time Controller Use case

Background/Challenge:

Client faced challenges such as:

- Unable to demonstrate symptoms of various severity
- Resource intensive to build case and repository
- Existing tools lack fidelity (visual, audio)

Objective/Solution:

Finer control of scenarios to cater to learning needs:

- Medical scenario dynamically changes
- Case-based learning model
- Develop clinical decision making skills with supervision



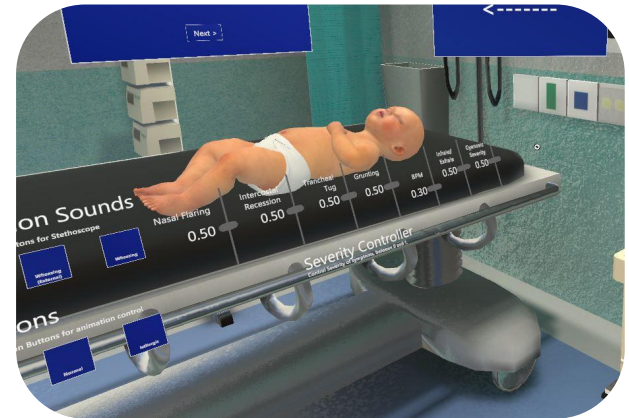
Scalability:

1 controller with 10+ adjustable symptoms = wide spectrum of pathologies simulated (>100)



Critical thinking and Adaptability:

Students learn how to analyse, manage and adapt to unpredictable scenarios



Product 4 Assessment Use case

Background/Challenge:

Client faced challenges such as:

- Resource Intensive
- Competency assessment in clinic is multi-faceted
- Missed opportunities to give feedback

Objective/Solution:

Finer control of scenarios to cater to learning needs:

- Detailed personalized feedback and advanced performance analytics
- Curriculum Integration



Greater learning satisfaction:

80% of users feel MediVR improves communication, self-reflection on performance, self-confidence

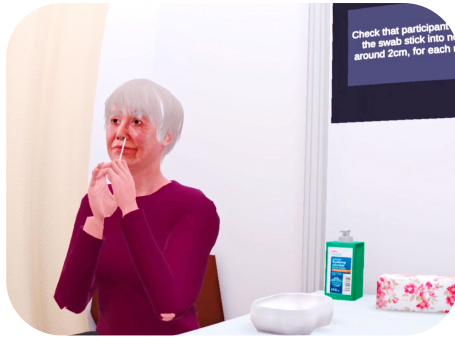


Increased competency acquisition:

Assess real clinical thinking and spot students' strength and blind spots



MediVR Scenarios



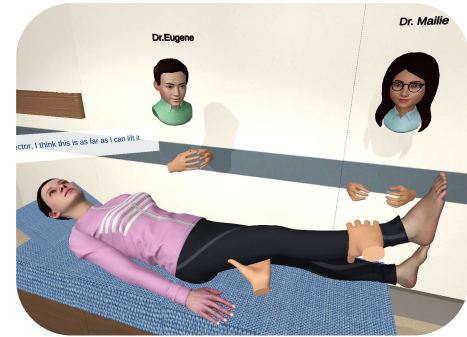
COVID-19 ART SWAB Supervisor

Learn how to conduct and supervise a COVID-19 swab test; test your knowledge in mock examinations



Clinical Examination

A complete VR/AI learning experience where students get to examine patients in clinical environments; Classroom or self-directed learning are supported



Physical Examination

Examine and interact with virtual patients through through physical examination in VR with haptic feedback

MediVR Scenarios



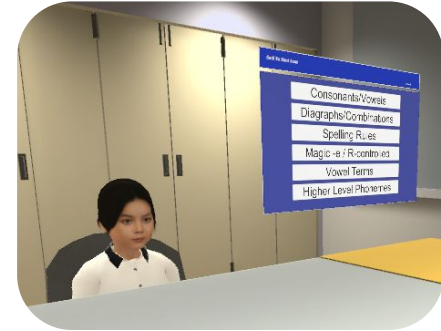
Ophthalmology Examination

Perform ocular examinations; expose students to critical and life-threatening signs and tools essential for clinical practice



Paediatrics Respiratory Distress

Learn how to manage paediatrics patients with varying degrees of respiratory distress and understand respiratory pathology in the virtual simulation



Literacy Training

Teach phonetics and learn how to use and apply the Orton-Gillingham card drills in a classroom setting with a virtual student

MediVR's Virtual Patient

Patient History

- Reflects real world statistics (eg. dementia and age)
- Reflected in all aspects of the patient's presentation

Conversation

- Patient wants to convey their symptoms and pains, expects doctor to understand and help solve their problem
- Hidden intents that doctors have to dig into*



Physical Symptoms

- Show accurate patient physical characteristic (pregnant)
- Realistic movements/animations (limp, gait of a scoliosis patient)
- Rare conditions

Behavior and Reaction

- Patient expresses themselves
- Emotions (ie. upset, distraught, expectations not met)*
- Expectations and worries addressed*
- Handle sensitive topics*

Relational variability between all medical symptoms and categories

* Features are coming soon

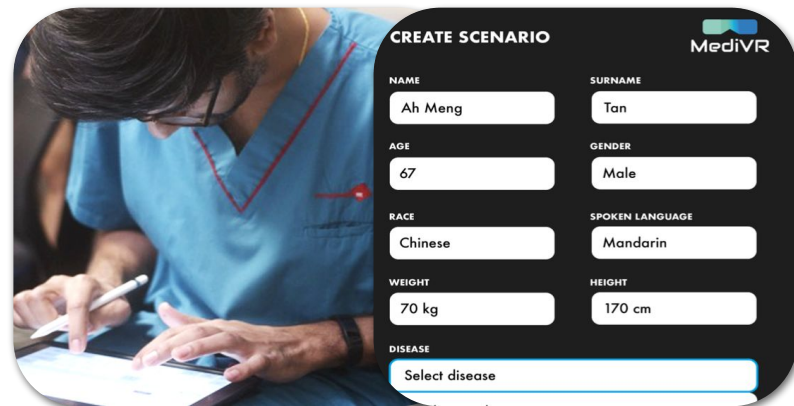
Synthetic Scenario Generator

(Provisional Patent)

From 1 Virtual Patient, multiple variations of that medical scenario are created:

- Prevent users from memorising outcomes
- Targeted scenario based on skill level

Doctors have the power to create **realistic** Virtual Patients with **high scalability**



CREATE SCENARIO

NAME: Ah Meng SURNAME: Tan

AGE: 67 GENDER: Male

RACE: Chinese SPOKEN LANGUAGE: Mandarin

WEIGHT: 70 kg HEIGHT: 170 cm

DISEASE: Select disease

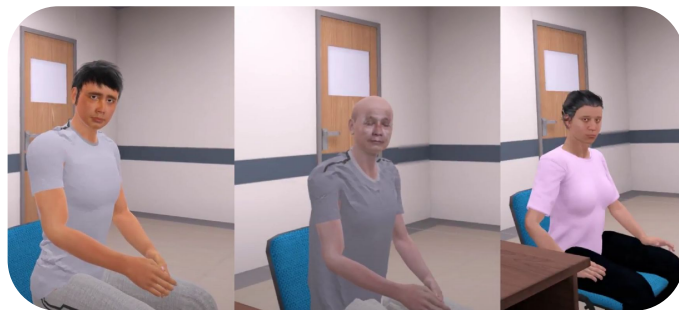
Synthetic Scenario Generator

Disease: L4/5 Spondylolisthesis (Lower back pain)

- Symptoms: **Similar**
- Onsets/Triggers: **Similar**
- Demographics: **Different**
- Social/Family History: **Different**

**Leads to Different Differential Diagnoses
&
Affects Management Plan**

Patients Generated by MediVR's SSG



Conversational AI Engine

(Provisional Patent)

Powers all Virtual Patients to process medical dialogue from the user by

- Handling stutter, pauses, sentence structure errors
- Multi-Language
- Emotion Control
- Understand medical phrases and vocabulary



Realistic conversation/natural dialogue with
**Virtual Patients, made possible with
custom-trained NLP model**

Conversational AI Engine



Able hold a full 15 min patient history conversation:

1. Patient's personal information
2. Presenting symptom
3. History of the presenting illness
4. Drug and treatment history
5. Past history
6. Social history
7. Family history
8. Systems review

Accuracy:

10% increase compared to off-the-shelf models



**CONTACT US
FOR A DEMO**



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