



Immersive, Mixed Reality Medical Education Platform

Clinical Need

Current medical training relies on opportunities to practice technical skills on real patients. Although medical simulators have been developed and marketed as a “bridge” to be used before first patient contact, these simulators have not been widely adopted as they are costly, require physical space, and are not readily adaptable to multiple medical specialties.

Our Innovative Approach

We developed and validated mixed reality training modules that allow users to learn and practice technical skills in a fully immersive training environment. The modules work on low-cost, commercially available mixed reality headsets, can be widely disseminated, and allow for self-directed practice and assessment. The modules also incorporate gamification of medical training to improve technical skills. Our next step is to build a “medical holodeck” allowing for team training with multiple clinicians working in unison on a simulated clinical scenario.

Results

We have conducted multiple studies on the use of virtual and augmented reality for medical education. Our studies show that mixed reality is a useful bridge to acquiring medical knowledge and technical skills in a safe environment. Early data from trials of our CT liver biopsy module suggest a strong correlation between trainees’ scores in our mixed reality module with their technical proficiency as measured by standard assessment. The mixed reality module can potentially predict who is technically proficient for a particular medical procedure.

Commercial Potential

We are raising \$5M to build a digital library of virtual reality modules that cover all commonly performed medical procedures. We are seeking investment to expand these mixed reality modules to create the first ever “medical holodeck” that allows groups of trainees to practice as a team in a room that simulates varied immersive medical environments. Our aim is to widely disseminate this training platform to enhance medical education globally.

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