

Advances in Virtual Medicine

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The main focus of virtual medicine is to develop and deliver virtual reality based training and computer enhanced learning in medicine. Traditionally, medical students learn diagnostic, therapeutic and surgical skills through actual clinical training on patients. With the advances of minimal invasive surgeries and thus general shortening of hospitalization time, the availability of patient source for teaching has become a major problem. Advanced technologies such as virtual reality, visualization and human computer interaction can make the learning process more efficient, engaging and flexible. It is now possible to construct immersive virtual environments to provide realistic visualization and haptics feedbacks for anatomy education and surgical training.

Our on-going and long-term collaborative research directions in virtual medicine include:

- Information-enhanced medical image computing
- Hardware-accelerated visualization and biomedical modeling
- Virtual anatomical and functional human
- High fidelity virtual surgical simulation

In this talk, our advances in these research directions will be introduced.