CSCI 8980-3: Experimental Technologies for Games and Simulations
Tues. & Thur., 4:00-5:15; Credit Hours: 1-3 (student’s choice)
Dr. Stephen J. Guy

Top: New modes of user-game interactions including brain interfaces and body tracking.
Bottom: Stills from recent games that feature procedurally driven gameplay.

**Topic overview:** Interactive digital technologies are increasingly breaking out of the traditional model of users navigating a single character through hand-designed levels using a standard controller. Increasingly, new ways are being developed to interact with these simulated worlds, often incorporating voice commands, physical motion, or even brain-computer interfaces. Moreover, new methods are being developed to move games beyond focusing on thumb-response challenges and lock & key puzzles and towards full-blown procedural simulations of complex environments and scenarios.

**Course details:** In this seminar course, we will discuss new algorithms and technologies that are pushing forward the state-of-the-art in digital environments. Topics include: procedural generation, new user interaction modes, real-time simulations, the role of machine learning in games, computer narrative generation, and user-generated content. Course work will include student-lead presentations, in-class discussions, and a semester-long project showcasing course concepts.

*Coding experience preferred; Non-CS students welcome and S/N is allowed (must be taken A-F for CS degrees); Send questions to: sjguy@cs.umn.edu*