The Role of Animation at Three Levels of the Information Visualization Framework

By

Dr. Pourang Irani

Friday, July 21st, 2006
10:30am
ITC317

In this talk I will present a number of on-going studies designed to investigate the role of animation in visualization systems. Previous research on the use of animation for visual systems can be grouped into two general categories. From a bottom-up approach, some results report on the use of artistic principles for designing appropriate animations, on the effectiveness of animated icons, or on the use of simple motion as a method for capturing attention. From a top-down view, a number of studies have investigated the effectiveness of animation for teaching algorithms, for explaining complex concepts, or for understanding the cognitive benefits of animated displays in comparison to static representations. While all these results give some account on the benefits and drawbacks of animations, they cannot directly guide designers in producing better animated displays or answer the question of whether smooth animations assist users in working with visual information.

I present a number of on-going studies that investigate the role of animation at three layers of the information visualization framework. At the representation layer I will present results and challenges of designing animations for depicting semantic information. At the presentation layer I will discuss the use of a visual technique for improving the visibility of moving objects. At the interaction layer I will present preliminary results quantifying the role of smooth transitions in maintaining perceptual constancy.

At the end of the presentation I will conclude with a demonstration of a novel interaction technique for assisting in off-screen navigation tasks and that takes advantage of smooth animations.

****

STUDENTS ARE ENCOURAGED TO ATTEND

****