

# Faculty of Computer Science

## CS6999 Reading Course

### Adaptive Hypermedia: Using Bayesian Networks for Computer Adaptive Testing

By  
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*Wednesday, January 29th, 2003*  
*3:30 p.m.*  
*ITC317*

STUDENTS ARE ENCOURAGED TO ATTEND

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Hypermedia is a term used to describe multimedia that supports hyper linking. The most common forms of hypermedia are websites and web-based applications. Adaptive hypermedia is a relatively new area of research (since about 1990), which addresses the problem that most hypermedia systems are static, presenting the same information in the same form to all users. Adaptive hypermedia systems alter their presentation, links, and content in an attempt to provide information that is better suited to an individual or groups of individuals.

This talk presents a number of different topics that were studied during a CS6999 directed studies course on adaptive hypermedia. It begins with an introduction to adaptive hypermedia, user modeling, and intelligent tutoring systems (ITS), one of the most common forms of adaptive hypermedia. It next presents the challenge in ITS of determining how much of the on-line course content a student actually understands. Millán and Pérez-de-la-Cruz describe a promising technique for evaluating which course concepts are understood by a student. This technique, using computer adaptive testing (CAT) and Bayesian networks, is discussed. Finally, some on-going work with the Millán and Pérez-de-la-Cruz algorithm is presented.

