

## NEW COURSE FOR SPRING 2006

CSCI 4900/6900 - Special Topics in CS

### AI and the Web

Instructor: Prashant Doshi

The role of the WWW in our lives is expanding: From a purely research tool, it has evolved into a global medium of information exchange, entertainment delivery, and social networking. The next step in its evolution is to become the infrastructure for businesses. In this role, the Web will be used to provide and request business services thereby enabling B2B interactions on a global scale. AI methodologies have played a significant role in the evolution of the Web and in its integration into our daily lives. For example, AI technologies reside in the content mining and delivery tools such as search engines and browsers, and the network protocols.

In this course, we will explore AI techniques, systems, and concepts involving the Web. Some of the topics that we will explore include:

- Intelligent information retrieval – Web data mining and clustering, link analysis, graph mining, text summarization, and the role of natural language processing techniques
- Intelligent Web interfaces – User modeling, and Web personalization
- Semantic Web – knowledge representation using logic, theorem proving, and trust
- Ontologies – reconciliation (clustering, mapping, and merging), and automatic population using machine learning
- Web services – modeling using logics, intelligent discovery and negotiation, and automatic composition
- Web processes – composition and choreography, fault-tolerant and adaptive processes using probabilistic models
- Single and multi-agent frameworks for the Web

The coursework will include primarily presentations of research papers in the above mentioned and related topics. Each student will also be required to function as a scribe at least once during others' presentations. In the latter part of the course, students will be required to complete group projects. The projects will involve implementing prototypical systems that compare and contrast existing algorithms, well written and researched survey papers, and research papers on new topics. The projects will be selected keeping the students' interests in mind.

Students will be graded in part on their understanding of the allocated research papers, quality of the presentations, attendance, and their enthusiasm in presenting and participating in the course. The quality of the completed projects will decide the remaining part of the grade.

There are no pre-requisites for this course. Students that are uncertain about the benefits of this course should consult the instructor prior to registering for the course.

For questions and clarifications on any aspects of the course, please do not hesitate to contact the instructor at [pdoshi@cs.uga.edu](mailto:pdoshi@cs.uga.edu).