Course Schedule - Fall 2007

Computer Science

498 ***Special Topics in CS*** credit: 0 to 4 hours.
Lectures in topics of current interest. See Schedule for current topics. Approved for both letter and S/U grading. May be repeated. Prerequisite: As specified for each topic offering, see Schedule or departmental course description.

CRN	Type	Section	Time	Days	Location	Instructor
42376	lecture	DF3	12:30 PM - 01:45 PM	TR	room 1131 Siebel Center for Comp Sci	Forsyth, D
42376: 3 hours Topic: Signals/AI. This course will deal with the signals and systems aspects of AI, covering: statistics and smoothing in natural language processing; hidden Markov models in speech, NLP and visual tracking; classifiers, fitting and robust methods in computer vision; and planning and more traditional AI topics in the context of game AI. Evaluation by MP's, exams and a final project. This section is for undergraduate OR graduate students.						
49172	lecture	DF4	12:30 PM - 01:45 PM	TR	room 1131 Siebel Center for Comp Sci	Forsyth, D
49172: 4 hours Topic: Signals/AI. This course will deal with the signals and systems aspects of AI, covering: statistics and smoothing in natural language processing; hidden Markov models in speech, NLP and visual tracking; classifiers, fitting and robust methods in computer vision; and planning and more traditional AI topics in the context of game AI. Evaluation by MP's, exams and a final project. This section is for graduate students only.						
42391	lecture	JH3	02:00 PM - 03:15 PM	TR	room 1111 Siebel Center for Comp Sci	Hockenmaier, J
42391: 3 hours Topic: Expressive grammar formalisms for natural language: Theory and Applications. This course will give an overview over the most commonly used formalisms in natural language processing and current research on grammar extraction and wide-coverage parsing. Prerequisites: basic exposure to AI and /or machine learning, or an intro to natural language processing. This section is for either undergraduate or graduate students.						
50658	lecture	JH4	02:00 PM - 03:15 PM	TR	room 1111 Siebel Center for Comp Sci	Hockenmaier, J
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49192	lecture	KK3	02:00 PM - 03:15 PM	TR	room 1131 Siebel Center for Comp Sci	Karahalios, K

49192: 3 hours Topic: Social Visualization - visualization of social data for social purposes. By social data we mean the traces that people leave as they go about their daily routine. These data may come from different sources such as the online world (i.e. email, IM logs, blogs, etc.) and the physical world (i.e. captured through sensors such as voice by microphone, movement and location data by camera, gps, ubisense device, etc.) Visualizations of these kinds of data can be used for increasing awareness of one's social environment and for highlighting cues and patterns implicit in communication. This section is for undergraduate OR graduate students.						
49193	lecture	KK4	02:00 PM - 03:15 PM	TR	room 1131 Siebel Center for Comp Sci	Karahalios, K
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43501	lecture	MG3	11:00 AM - 12:15 PM	WF	room 1131 Siebel Center for Comp Sci	Garzaran, M
43501: 3 hours Topic: Program Optimization: Prerequisites: CS 232 and CS 225. The course will cover techniques to improve program execution speed and energy consumption. The objective is to prepare students to program future systems where performance improvements will not be, as it was in the past, the direct result of faster clock rates, but must instead be laboriously obtained by applying programming techniques that effectively exploit parallelism and locality. This section is for either undergraduate or graduate students.						
40096	lecture	MG4	11:00 AM - 12:15 PM	WF	room 1131 Siebel Center for Comp Sci	Garzaran, M
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49190	lecture	MV3	12:30 PM - 01:45 PM	TR	room 1111 Siebel Center for Comp Sci	Viswanathan, M
49190: 3 hours Topic: The course will provide an introduction to mathematical logic from the perspective of computer science, emphasizing decidable fragments of logic and decision algorithms. The topics covered will be motivated by applications in artificial intelligence, databases, formal methods and theoretical computer science. The goal of the course is to prepare students for using logic as a formal tool in computer science. The course will roughly cover the following topics (in this order): syntax, semantics and proof theory of propositional logic, sat-solvers, syntax of first-order and second-order logic, connections between monadic second order logic and regular languages (word and tree, finite and infinite), tree-width and Courcelle's theorem with applications to parametric complexity, finite model theory and descriptive complexity, games and inexpressiveness. Prerequisites: Courses CS 173, CS 225, and CS 273 (new version since Spring 2006), or instructor's consent. This section is for undergraduate OR graduate students.						
49191	lecture	MV4	12:30 PM - 01:45 PM	TR	room 1111 Siebel Center for Comp Sci	Viswanathan, M

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40094	lecture	PR3	09:30 AM - 10:45 AM	WF	room 1111 Siebel Center for Comp Sci	Prabhakaran, M
40094: 3 hours Topic: Theoretical Foundations of Cryptography This course is an introduction to the theoretical foundations of cryptography. Emphasis will be on rigorous mathematical definitions of security, and proofs of security. Prerequisite: CS 173 and 273 or consent of instructor. Some mathematical maturity will be expected. Familiarity with basic theory of computation and complexity theory will be helpful. This section is for undergraduate or graduate students.						
47171	lecture	PR4	09:30 AM - 10:45 AM	WF	room 1111 Siebel Center for Comp Sci	Prabhakaran, M
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31537	lecture	SJ3	03:00 PM - 04:15 PM	MW	room 1109 Siebel Center for Comp Sci	Jacobson, S
31537: 3 hours Topic: Stochastic Processes. Modeling and analysis of stochastic processes. Familiarity with discrete-time Markov chains, Poisson processes, and birth-and-death processes is assumed. Topics include the transient and steady-state behavior of continuous-time Markov chains; renewal processes; models of queuing systems (birth-and-death models, embedded-Markov-chain models, queuing networks); reliability models; and inventory models. This section is for undergraduate OR graduate students.						
49838	lecture	SJ4	03:00 PM - 04:15 PM	MW	room 1109 Siebel Center for Comp Sci	Jacobson, S
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40093	lecture	SS3	09:30 AM - 10:45 AM	TR	room 1131 Siebel Center for Comp Sci	Sinha, S
40093: 3 hours Topic: Algorithms in Bioinformatics. Prerequisite: Programming skills such as CS 225 as well as basic probability and statistics. This course will be geared towards undergraduate and Masters level						

students in computer science. We shall see how state-of-the-art techniques in computer science, especially in sequence analysis and machine learning, are applied to problems in bioinformatics. The student will learn how to formulate important biological problems as computable problems, and develop algorithms to solve such problems efficiently. An application-oriented project will give students hands-on experience with biological data sets. This section is for undergraduate or graduate students.						
43670	lecture	SS4	09:30 AM - 10:45 AM	TR	room 1131 Siebel Center for Comp Sci	Sinha, S
43670: 4 hours Topic: Algorithms in Bioinformatics. Prerequisite: Programming skills such as CS 225 as well as basic probability and statistics. This course will be geared towards undergraduate and Masters level students in computer science. We shall see how state-of-the-art techniques in computer science, especially in sequence analysis and machine learning, are applied to problems in bioinformatics. The student will learn how to formulate important biological problems as computable problems, and develop algorithms to solve such problems efficiently. An application-oriented project will give students hands-on experience with biological data sets. This section is for graduate students only.						