CMSC 421: Introduction to Artificial Intelligence - Spring 2015

Time and Place: Tuesdays and Thursdays, 12:30 – 1:45 pm, CSIC 1122
Instructor: James Reggia, AVW Bldg., Rm. 3233, 301-405-2686, reggia@cs.umd.edu
Office Hours: Thursdays, 1:45 - 3:00 PM
Teaching Assistant: Joshua Brule, jtcbrule@gmail.com
Office Hours: Mondays, 11:00 - 12:00, Wednesdays, 10:00-11:00 (in AVW 4103)

Class web page: http://www.cs.umd.edu/class/spring2015/cmsc421/
Gives exam dates, homework assignments and their due dates, lecture slides, reading assignments, and links to other useful information.

Objectives: This course provides a broad introduction to Artificial Intelligence (AI). The primary objectives are to develop knowledge of AI programming methods, to provide an introductory survey of past work in AI, and to examine in greater depth selected specific topics in problem solving, inference, and machine learning.

Content:
Introduction: defining AI, history, overview, implications

AI Programming Languages and Methods: lisp symbolic programming methods; prolog; others

Traditional Problem-Solving Methods: heuristic state space search, constraint satisfaction, game trees, problem-reduction, first-order logic, automated reasoning, resolution

AI in Action: knowledge representation and inference with rules and semantic nets, Bayesian inference, rule-based expert systems, causal/Bayesian networks, abduction, knowledge acquisition, robotics and planning methods, introduction to natural language processing

Learning and Adaptation: machine learning of rules, decision trees, and causal nets; neural models such as perceptrons, error back-propagation, and self-organizing feature maps; evolutionary computation, and artificial life

Workload and Grading: There will be regular reading and homework assignments. Grading will be based on homework assignments, quizzes and class participation (collectively 30%), a midterm exam (30%), and a final exam (40%).

Textbooks:

Disabilities: Any student eligible for and requesting reasonable academic accommodations due to a disability needs to provide the instructor with a letter of accommodation from the Office of Disability Support Services (DSS) within the first two weeks of the semester.

Class Absence Policy: The campus has an established policy governing class absences. This policy requires instructors to provide the following information. For this course, the “major scheduled grading events” are the midterm/interim and final exams. A maximum of one self-signed medical excuse for other grading events will be accepted.

Academic Integrity: All homework assignments are to be done individually and independently; all submitted work must be your own. All students are expected to be familiar with and to uphold the Code of Academic Integrity administered by the Student Honor Council at UMCP (please see http://www.shc.umd.edu).