Foundations of Artificial Intelligence

CS 2710 – Fall 2019

Lecture meeting time: Monday, Wednesday: 2:30PM - 3:45PM
Classroom: 327 Cathedral of Learning (CL 327)

Course Web page: http://people.cs.pitt.edu/~milos/courses/cs2710-Fall2019/

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Course Description:

This course will provide an introduction to the fundamental concepts and techniques underlying the construction of intelligent computer systems. Topics covered in the course include: problem solving and search, logic and knowledge representation, planning, reasoning and decision-making in the presence of uncertainty.

Prerequisites: undergraduate level AI course (CS 1571 or its equivalent) or the permission of the instructor.

Text:


Requirements and Grading:

- Lectures 5%
- Homework assignments 45%
- Midterm 25%
- Final 25%

Homework

There will be weekly homework assignments. The homework assignments will include a mix of theoretical and programming problems. Homework assignments must be submitted in electronic form before the beginning of the lecture on the day the assignment is due. No late homework will be accepted.

Programming assignments
Knowledge of Python is necessary for the programming part. Your Python programs submitted by you should run on Python 3.6. Please see the rules for submitting programming assignments on the course webpage.

Lectures

Lecture attendance, your activity during the lectures, and 3-4 unannounced short quizzes would count 5% of the total grade. Quizzes will be based on lecture material, reading assignments, and homework. Quizzes may be given during the lecture without prior announcement. No make up quizzes are allowed.

Policy on Cheating

All the work in this course should be done independently. **Collaborations on quizzes, exams and homework assignments are not permitted.** Cheating and any other anti-intellectual behavior, including giving your work to someone else, will be dealt with severely. If you feel you may have violated the rules speak to us as soon as possible.

Please make sure you read, understand and abide by the Academic Integrity Code for the Faculty and College of Arts and Sciences.

Students With Disabilities

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and Disability Resources and Services, 216 William Pitt Union, (412) 648-7890/(412) 383-7355 (TTY), as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.

Tentative syllabus:

- **Problem solving and search.** Formulating a search problem, Search methods, Constraint Satisfaction Search, Combinatorial and Parametric Optimization.
- **Logic and knowledge representations.** Logic, Inference.
- **Planning.** Situation calculus, STRIPS, Partial-order planners.
- **Uncertainty.** Modeling uncertainty, Bayesian belief networks, Inference in BBNs, Decision making in the presence of uncertainty.
- **Special topics: Machine Learning.** Intro to machine learning. Supervised and unsupervised learning. Selected topics in machine learning.