Syllabus

Coordinates:
Time: 12:40pm - 2:00pm, Tuesdays and Thursdays
Location: Olhsted Hall, room 1122

Instructor:
Christian Shelton
cshelton@cs.ucr.edu
office hours: T 3-4pm, W 11am-12pm

Text: *Artificial Intelligence: A Modern Approach, second edition* by Stuart Russell and Peter Norvig.

Course Purpose: This course is a survey of modern problems, algorithms, and techniques in artificial intelligence. As such, it is necessarily broad but shallow. We will spend approximately two weeks on each of four topics, plus a few lectures on other miscellaneous topics. The emphasis will be on core AI algorithms and methods, but we will touch on some applications.

Tentative Class Schedule:

week		Tuesday		Thursday	assigned	due
1	3/30	Intro, what is AI?	4/1	Search	**PS 1**	
2	4/6	Adversarial search	4/8	Continuous optimization		
3	4/13	Logic, resolution	4/15	Predicate logic	**PS 2**	**PS 1**
4	4/20	Planning	4/22	Path Planning		
5	4/27	Probability	4/29	Bayesian networks	**PS 3**	**PS 2**
6	5/4	Markov chains, HMMs	5/6	Speech Recognition		
7	5/11	Utility theory, MDPs	5/13	Reinforcement learning	**Final PS**	**PS 3**
8	5/18	Parameter learning	5/20	Supervised learning	**PS 4**	
9	5/25	Supervised learning	5/27	Object recognition		
10	6/1	Vision	6/3	Game theory		**PS 4**
		finals week				**Final PS**

Course Work: There will be no exams for this course. Four problem sets will be due during the quarter. Each will have some theory questions and one programming assignment. They will be handed out two weeks before they are due, in the middle of the material covered on the assignment. All material necessary for the problem set will be covered in class at least one week before the problem set is due.

As a fifth and final problem set, you will write an agent to compete against your fellow classmates' entries in a simulated environment. The competition will be run during finals week at a time and place to be decided. Your place in the competition will not affect your grade on the assignment. The goal of this final assignment is for you to demonstrate your ability to take the different algorithms described during the course and combine them into a single useful agent.

These problem sets will be non-trivial, so allocate enough time for them. Leaving them to the last moment is asking for trouble. Hopefully most of the work will be interesting and instructional, and not tedious.

No late problem sets will be accepted. All problem sets must be turned in by the beginning of class on the Thursday they are due. If you are not finished, turn in whatever you have completed. Absolutely no assignments will be accepted after the due date. By enrolling in this course, you are agreeing to the problem set schedule above. It is your responsibility to schedule your time so that you can turn the homework in on time.

External sources: The problem sets are to be done alone. You are free to read any external books or papers. However, you must site any sources, other than the course text, you consulted for the problem sets (this includes other students). At the top of the problem set, list the source or person and what information you obtained or discussed. You may **not** use any code other than code supplied by the instructor for the programming portions of the problem set. While you may be able to find some of the algorithms on the internet, the point of the assignments is for you to learn the subtleties of the algorithm by coding it up yourself.

Grade: Each problem set (including the final one) will be worth 20% of your grade.