CS 4318: Artificial Intelligence
Spring 2024
Course syllabus

Class meetings   section 010:   MWF 9:00–9:50   in MCS 112

Instructor
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office hours: online MTWRF 2:00–4:00 and by appointment

Textbook
Stuart Russell and Peter Norvig. *Artificial Intelligence: A Modern Approach.* 4th edition. Pearson, 2021. ISBN: 978-0-13-461099-3. Available in the ASU bookstore.

Description
Fundamental concepts and techniques of intelligent systems; representation and interpretation of knowledge on a computer; search strategies and control.

Prerequisites
CS 2336 (Data Structures and Algorithms) is a prerequisite for this course. Please see me if you haven't taken CS 2336 or if you're unsure about your proficiency in C++ and data structures.

Grading breakdown

50% homework/quizzes/projects/challenges

30% midterm exams (three or four)

20% final project

Student learning outcomes
After successful completion of this course, students will demonstrate an understanding of
- agent-based AI architectures.
- various searching algorithms commonly used in artificial intelligence software.
- adversarial search and game-playing agents.
- logic-based agents.
- machine learning.

Class format
This face-to-face class will usually have a lecture/discussion format, with homework and programming assignments done primarily outside of class. It is very important that you do all assigned reading before class and come with relevant questions. There may be in-class quizzes over reading and lecture material.

I will take attendance, and you will need to sit in the same place all semester. Class attendance is strongly encouraged. You have a duty to inform me as soon as you know that you'll have to miss a class meeting.

Assignments may consist of homework problem sets, programming projects and "agent challenges". In each agent challenge, you will program an agent that will compete against (and perhaps coöperate with) other students' agents on some task. Each agent challenge may have multiple iterations. You will need an account on the `csunix.angelo.edu` server to work on all programming assignments.

You will generally be asked to work individually on assignments. Discussion and giving and receiving help are generally encouraged when working on assignments, but all work you turn in must be your own; anything you turn in you must understand thoroughly and be prepared to explain in detail. Whenever you work with anyone but me (including tutors) in any way, you *must* write fully detailed comments in your code describing the help: *who* helped, *how* they helped on *which* part(s), etc. Failure to do so is considered taking credit for work not done and thus cheating. I will be glad to help you on assignments and concepts when you need it.

Exams must be completed *entirely* independently. Instead of a comprehensive final exam at the end of the semester, I am planning a final project.

Blackboard (`angelo.blackboard.com`) will be used to keep track of grades and assignments. You should check Blackboard and your ASU e-mail at least once a day to make sure you're not missing anything. In particular, your ASU e-mail is the only reliable way I have of contacting you outside of class, so please don't neglect it.

Safety	I encourage wearing a mask and keeping as much distance from others as is reasonably possible. Keep an eye on ASU's public health updates at `www.angelo.edu/public-health`.

For safety reasons, I will hold office hours online using Blackboard Collaborate. Please take advantage of face-to-face class meetings to ask questions and get help, but when you need help outside of class just get in touch and I'll do what I can to help.

Computer requirements	You may use PCs in the computer labs, but I recommend that you have your own Windows 10 or 11 computer ready to use when you can't get to a lab. You may need to download and install free software, such as the Respondus LockDown Browser. It is your responsibility to have and to use a reliable Internet connection; for best results, use an Ethernet cable to connect to your Internet source instead of relying on Wi-Fi. You will need a microphone to use Blackboard Collaborate for virtual office hours.

Semester schedule	This schedule of topics should be considered approximate and tentative.

week of	topic
January 17th	introduction to artificial intelligence
January 22nd	intelligent agents
January 29th	classical search strategies
February 5th	classical search strategies
February 12th	beyond classical search
February 19th	beyond classical search
February 26th	adversarial search
March 4th	adversarial search
March 11th	*spring break*
March 18th	adversarial search
March 25th	logical agents
April 1st	first-order logic
April 8th	uncertainty
April 15th	machine learning
April 22nd	machine learning
April 29th	machine learning

Final exam/project	The final exam for this course is scheduled for Wednesday, May 8th, 8:00–10:00. The plan is not to have a final exam, but we may use this time for some other purpose relating to the final project.
Academic honesty	Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. By remaining enrolled in this course you agree not to commit academic misconduct as defined in section I.B.1 of the Student Handbook, available at `www.angelo.edu/student-handbook`.
Important university policies	• You must contact Student Disability Services in order to request and to implement academic accommodations. • For ASU's policy on absences due to religious holy days, see OP 10.19 at `www.angelo.edu/opmanual`. • I am obligated to report any knowledge of sexual misconduct to the Title IX office; see `www.angelo.edu/services/title-ix` for more.
Modifications	This syllabus, including grade evaluation and course schedule, is subject to modification. In particular, the COVID-19 pandemic may require significant changes in course delivery and content on potentially short notice.