CS 404: Artificial Intelligence
Spring 2024

Lectures: Wednesday: 14:40–16:30 (FENS G077), Thursday: 16:40–17:30 (SBS 1099)

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TAs: Aysu Boğatarkan, Müge Fidan

LAs: Beyza Başak, İsmail Berat Düzenli, Steven El Khaldi, Semih Zaman

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Course description. This course provides an introduction to Artificial Intelligence (AI). In this course we will study a number of theories, mathematical formalisms, and algorithms, that capture some of the core elements of computational intelligence. We will cover some of the following topics: search, problem solving, games, logical representations and reasoning, automated planning, representing and reasoning with uncertainty, decision making under uncertainty, learning, robotics, and machine ethics.

Course objective. To give an understanding of some of the fundamental ideas in AI, and to acquaint you with relevant methods and tools used by AI researchers and practitioners.

Prerequisites/Preferences. An introductory course to computing (like CS201) is required. A good background on discrete mathematics, probability, data structures, and algorithms is preferred for a better understanding of the topics.

Recommended textbooks.

- *Artificial Intelligence: A Modern Approach* by Stuart Russell and Peter Norvig. `http://aima.cs.berkeley.edu/`
- *Foundations of Computational Agents* by David Poole and Alan Mackworth. `https://artint.info/`

Assignments. There will be four assignments, each involving a programming component and a written component. Each student should write up the solutions on their own and should be able to explain the solutions to the instructor and/or the teaching assistants during the demo sessions. Late submissions will not be accepted.

Exams. There will be two midterm exams, and one final exam. There will be only one make-up exam (to be considered instead of one missed exam): it will be given on the next business day after the final exam, and only if requested with an official report before the final exam. In the exams, students are responsible for the material presented in the lectures and covered in the assignments.

Grading. Grades will be determined by the assignments, the midterm exam(s), and the final exam.