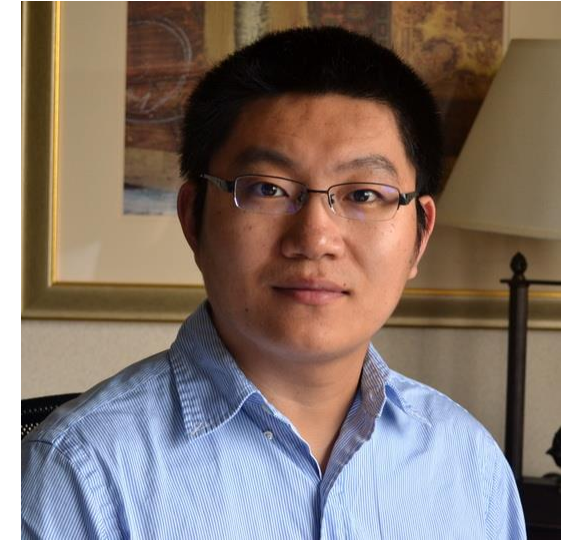


COMPSCI-603: Robotics

Course Overview

General Information

- Instructor: Prof. Hao Zhang
 - Director, Human-Centered Robotics Lab
 - Associate Professor, CICS @ UMass Amherst
 - Core Faculty, Robotics @ UMass Amherst
 - Office: LGRC A357
 - Email: hao.zhang@umass.edu
 - URL: <https://hcr.cs.umass.edu/people/hzhang>
 - Office Hours:
 - 1:30-2:30 PM on Mondays
 - 5:15-5:45 PM on Tuesdays (open office hours)
 - 5:15-5:45 PM on Thursdays (open office hours)



General Information

- Teaching Assistant: Williard Joshua Jose

- Email: wjose@umass.edu
- Office Hours:
 - 4:00-5:00 PM on Wednesdays
 - 10:30-11:30 AM on Fridays
 - Location: LGRC-Tower T223/T225



- If you have any questions, you may see the instructor or TA in person every weekday.

General Information

- Prerequisites:
 - No enforced prerequisites.
 - Mathematical (e.g., statistics and linear algebra) and fundamental CS knowledge (e.g., data structure) are assumed.
 - Good experience of programming using **Python in Linux** is necessary.
- Required textbook:
 - No required textbook.
 - References:
 - Sebastian Thrun, Wolfram Burgard and Dieter Fox. “Probabilistic Robotics.” MIT Press. 2005.
 - Richard S. Sutton and Andrew G. Barto. “Reinforcement Learning: An Introduction.” MIT Press. 2018.
 - Roland Siegwart, Illah Reza Nourbakhsh and Davide Scaramuzza. “Introduction to Autonomous Mobile Robots.” MIT Press. 2011.

Course Material

- **Public course website** for course schedule and assignments:
 - Link: <https://hcr.cs.umass.edu/courses/compsci603>
 - If you miss a class, please check the course website to catch up (make sure to refresh the web pages).
- **Canvas** as the official learning management system (LMS):
 - All assignments will be submitted to Canvas (it is the new official learning management system for UMass Amherst).
 - Grades will also be available in Canvas.
- **Piazza** is optional, and used for Q/A (managed by the TA).
 - Link: <https://piazza.com/umass/spring2024/compsci603/home>
 - Access code: posted in Canvas
 - Free version ([“contribution-supported” model](#))

Course Material

<https://hcr.cs.umass.edu/courses/compsci603>

COMPSCI 603: Robotics

LGRC A104A, Tue/Thur 4:00-5:15 PM, Spring 2024

[Overview](#)

[Schedule](#)

[Assignments](#)

[Syllabus](#)

Course Description: This course is intended to serve as an advanced overview of robotics from the perspective of computer science and artificial intelligence. The course discusses the complete autonomy loop, including perception, cognition, and action. This course covers the theories, algorithms, and computational implementations related to these topics. Students will gain hands-on experience in implementing and extending such algorithms using simulations and real robots. The course offers research-oriented project-based learning, with focus on open discussions for how to do research to go beyond the state of the art.

Instructor: [Prof. Hao Zhang](#)

- *Email:* hao.zhang@umass.edu
- *Office Hours:* 1:30-2:30 PM on Mondays, 5:15-5:45 PM on Tuesdays and Thursdays
- *Office Location:* LGRC A357

Teaching Assistant: Williard Joshua Jose

- *Email:* wjose@umass.edu
- *Office Hours:* 2:30-3:30 PM on Wednesdays and Fridays
- *Location:* LGRC Tower 223/225

Last updated: 01/28/2024

Course Material

- Evaluation:
 - Grading will be based on four projects:
 - Project 1: 10% (individual project)
 - Project 2: 30% (individual project)
 - Project 3: 30% (individual project)
 - Final project: 30% (group project)
 - There is no extra credit or any other additional work available outside of the assigned projects.
 - Final letter grades will be determined by overall weighted average:

100–90	89.9–85	84.9–80	79.9–75	74.9–70	69.9–60	59.9–0
A	B+	B	C+	C	D	F

- Borderline is defined as ~0.75 points.

Course Policy

- Due Dates and Late Submissions:
 - Project write-ups, starter code and due dates will be posted on the course website.
 - All projects are due to Canvas at the time specified in the write-ups.
 - **Each deliverable has a four-day late submission period, and late submission will lose 25% points per day for that specific deliverable.**
 - **MANAGE YOUR TIME and START EARLY!**
- Exemptions:
 - You may ask for an extension by emailing the instructor in the case of illness, religious or funerary events, university-related events, and extenuating nonacademic reasons.

Course Policy

- Grading Corrections:
 - Send any grading correction requests to the instructor within one week of receiving the grade, or before the end of the semester, whichever comes first.
 - Your grade will not be lowered.
- Version Control Software:
 - If you plan to use version control software (e.g., Github, GitLab, or Bitbucket) to manage your projects, you must make sure your repositories are private and not publicly available.
- Class Attendance:
 - Class attendance will not be taken.

Course Policy

- Academic Honesty:
 - Learning from peers is encouraged, but academic dishonesty is not tolerated.
 - Rule of thumb: any learning should be in your head.
 - Process if a student is suspected of academic dishonesty:
 - A formal path will be used to inspect whether academic dishonesty has taken place.
 - If found guilty, the student will receive zero points for the project and/or fail the course.
 - If found guilty, it will go on the student's permanent record at UMass.
 - UMass Academic Honesty Policy: <https://www.umass.edu/honesty>.
 - CICS copyright policy:
 - CICS forbids any CICS course materials without the express written consent of the instructor of the course from which the materials come.
 - Violations of this policy will be deemed instances of “facilitating dishonesty” and therefore may result in charges under the Academic Honesty Policy.

Course Support

- Inclusivity:
 - We honor UMass Amherst's commitment to embrace diverse people, ideas, and perspectives to create a vibrant learning and working environment.
 - UMass Guidelines for Classroom Civility and Respect:
https://www.umass.edu/dean_students/campus-policies/classroom.
- Accommodations:
 - We are committed to providing an equal educational opportunity for all students.
 - If you have a documented disability that requires an accommodation, please notify the instructor so that we may make appropriate arrangements.
 - If you need an accommodation: <https://www.umass.edu/disability>.

Course Support

- Title IX:
 - If you suspect any problems on sexual violence, gender discrimination, or sexual harassment, let the instructor know.
 - UMass Title IX resources: <https://www.umass.edu/titleix>.
- Plan and Communicate for Success
 - If there are aspects of the course that prevent you from learning or make you feel excluded, please let the instructor know.
 - Together we'll develop strategies to meet both your needs and the requirements of the course.