

Robotics and Autonomous Systems (Artificial Intelligence), MS

ESRASAIMS

You can develop the next generation of intelligent robots with the knowledge you gain in robotics, artificial intelligence, autonomy, control systems, machine learning and human-machine interaction, among other fields.

Program description

Degree awarded: MS Robotics and Autonomous Systems (Artificial Intelligence)

The artificial intelligence concentration is one of four concentrations in the multidisciplinary MS program in robotics and autonomous systems, which emphasizes robotics, controls, autonomous systems, artificial intelligence and related fields. This concentration is appropriate for students who wish to emphasize applications in artificial intelligence and computer science.

Students receive a solid theoretical and practical background in a variety of topics that facilitate the study of intelligent agents --- that is, any robotic system that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. Thus, students in this concentration are exposed to the frontiers of the general topics in AI, including statistical machine learning, computer vision, natural language processing, knowledge retrieval and reasoning, and formal methods of planning. As compared with the other concentrations, the AI concentration focuses more on the algorithmic aspects of robotics.

This concentration program is offered by the School of Computing and Augmented Intelligence.

At a glance

- **College/School:** [Ira A. Fulton Schools of Engineering](#)
- **Location:** [Tempe](#)

Accelerated program options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an [accelerated bachelor's plus master's degree](#) with:

[Computer Science, BS](#)

[Computer Systems Engineering, BSE](#)

[Informatics, BS](#)

[Software Engineering, BS](#)

Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated master's during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and [how to apply](#).

Degree requirements

30 credit hours and a portfolio, or

30 credit hours and a thesis, or

30 credit hours including the required applied project course (CSE 593)

Required Core (6 credit hours)

EGR 501 Applied Linear Algebra for Engineers (3) or MAE 501 Linear Algebra in Engineering (3)

EGR 545 Robotic Systems I (3) or MAE 547 Modeling and Control of Robots (3) or RAS 545 Robotic Systems I (3)

Concentration (6 credit hours)

Electives or Research (12-18 credit hours)

Culminating Experience (0-6 credit hours)

CSE 593 Applied Project (3) or

CSE 599 Thesis (6) or

portfolio (0)

Additional Curriculum Information

Students are required to select one of the approved culminating experiences for the concentration.

A defense is required for the thesis option. The portfolio is a compilation of two projects that are finished in the required concentration courses. Students must write a portfolio report that includes the highlights of the two projects. The applied project is a written report and oral presentation on research related to the student's coursework and interests.

Students should see the academic unit for the approved concentration coursework as well as the available elective and research courses. Elective or research coursework must be selected from among the courses listed for the other three concentrations. Additional electives must be graduate courses in science, engineering, mathematics or others approved by the graduate program committee.

Admission requirements

Applicants must fulfill the requirements of both the Graduate College and the Ira A. Fulton Schools of Engineering.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree in engineering, science, mathematics or a related field from a regionally accredited institution.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in the last 60 hours of their first bachelor's degree program, or applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

Applicants are required to submit:

1. graduate admission application and application fee
2. official transcripts
3. letter of intent or written statement
4. professional resume
5. proof of English proficiency

Additional Application Information

An applicant whose native language is not English must provide proof of English proficiency regardless of their current residency. Applicants should review the [admission services website](#) for more details.

Students applying to the artificial intelligence concentration are expected to possess basic knowledge in key relevant areas (e.g., programming languages, discrete mathematics, data structures and algorithms, or similar topics). Indicative ASU courses include CSE 220 Programming for Computer Engineering or 240 Introduction to Programming Languages; MAT 243 Discrete Mathematical Structures or 300 Mathematical Structures; and CSE 310 Data Structures and Algorithms.

Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about [ASU tuition and financial aid](#) options to find out which will work best for them.

Application deadlines

Fall

Spring [expand](#)

[expand](#)

Career opportunities

Graduates with a Master of Science in artificial intelligence are prepared for doctoral study and for industrial positions in numerous industries as varied as manufacturing, transportation, aerospace, defense and health care.

Contact information

[Computer Science and Engineering Program](#) | CTRPT 105
SCAI.Grad.Admission@asu.edu | 480-965-3199