

Master of Science in Artificial Intelligence

Designed for students seeking to go beyond a general computing degree, the MS-AI offers a focused, rigorous pathway into AI research, development, and deployment, equipping graduates to drive innovation across industry, government, and academia.

At a glance

Program summary

Degree	Master of Science (M.S.) in Artificial Intelligence
Credits	30 (thesis track) or 33 (non-thesis track)
Start terms	Fall or Spring
Schedule	Full-time or part-time
Location	Catonsville
GRE	Not required
Department	Computer Science and Electrical Engineering (CSEE)

Why UMBC for AI

- **R-1 institution.** UMBC is classified R-1 (Very High Research Activity) under the Carnegie classification.
- **More than 50 faculty** engaged in AI and related areas across multiple departments and research centers.
- **Federally funded research programs** led by faculty through agencies including NSF, NIH, DARPA, and ONR.
- **Top-tier publications.** CSEE faculty publish in venues including NeurIPS, ICML, ACL, EMNLP, AAAI, and IEEE TPAMI.
- **Nationally recognized centers** in artificial intelligence, cybersecurity, and quantum science.

Active AI faculty work spans foundation models, trustworthy and interpretable AI, clinical and mental health NLP, multimodal learning, robotics, and AI for science.

What you will study

The curriculum is built around two required core courses (a grade of B or better is required), plus electives that let students tailor the degree to their research and career goals.

Curriculum structure

Requirement	Courses
Core (2 required)	CMSC 671 Principles of Artificial Intelligence; CMSC 678 Introduction to Machine Learning
Bucket A electives (choose 3)	CMSC 672 Computer Vision; CMSC 673 Introduction to Natural Language Processing; CMSC 675 Introduction to Neural Networks; CMSC 679 Introduction to Robotics
Bucket B electives (selected)	CMSC 636 Data Visualization; CMSC 641 Design and Analysis of Algorithms; CMSC 663 Data Privacy; CMSC 676 Information Retrieval; CMSC 771 Knowledge Representation and Reasoning; ENEE 712 Pattern Recognition; CMSC 691 Special Topics in Computer Science (e.g., Neurosymbolic AI, Trustworthy AI)

Choose your track

Thesis track: 30 credits

24 credits of graduate coursework plus 6 credits of CMSC 799 Master's Thesis Research. Students conduct independent research under faculty mentorship, exploring advanced AI methodologies, designing experiments, and contributing to the field through novel findings and technical publications. The thesis is defended with an oral presentation.

Non-thesis track: 33 credits

33 credits of graduate coursework. Students complete additional coursework and may participate in independent studies or internships, preparing them for AI-driven roles in industry and applied research.

Hands-on experience

Research assistantships

Work alongside faculty in active AI labs on projects funded by agencies like NSF and NIH.

Career paths

Potential roles

- AI engineer or machine learning engineer
- Data scientist with an AI specialization
- Research scientist in AI and machine learning
- Computer vision engineer
- AI product manager

Industries

Technology, finance, national defense, cybersecurity, healthcare, government, and research.

Capstone projects

Collaborate with faculty PIs on real-world challenges in areas like trustworthy AI systems and data-driven decision-making.

Admission requirements

- Four-year bachelor's degree from a regionally accredited U.S. institution or an equivalent non-U.S. university
- Cumulative GPA of 3.0 or higher on a 4.0 scale is desired
- A narrative statement (statement of purpose) covering academic and professional background and areas of interest
- An official transcript
- Two letters of recommendation
- GRE scores are not required
- International applicants must provide proof of English proficiency, financial certification, and appropriate visa documentation. English proficiency exams (e.g., TOEFL) are required if the applicant does not hold a degree from a U.S. institution or prior instruction was not in English.

Application deadlines

Deadlines by start term and applicant type

Applicant type	Fall start	Spring start
Domestic, priority (assistantship consideration)	January 20	June 1
Domestic, final	August 1	November 1
International	January 20	June 1

Application decisions can take 6 to 8 weeks after the program deadline. Admissions are offered for Fall and Spring semesters only.

Tuition and funding

Maryland residency is not required to enroll. As a University System of Maryland institution, UMBC offers Maryland residents a reduced in-state tuition rate. UMBC participates in all federal and state student financial aid programs and offers scholarships and assistantships through the Graduate School, graduate departments, and the Office of Financial Aid and Scholarships. Estimate costs with the [UMBC graduate cost calculator](#).

Next steps

Apply: umbc.edu/admissions/graduate

Program details: csee.umbc.edu/graduate/master-of-science-in-artificial-intelligence

Program contact: Dmitri Perkins, Graduate Program Director, CSEE. dmitrip1@umbc.edu, 410-455-3019. Please review the [CSEE graduate FAQ](#) before contacting the program.

Admissions contact: UMBC Graduate School. gradschool@umbc.edu, 410-455-2537. Staff are available Monday through Friday, 9 a.m. to 5 p.m.

University of Maryland, Baltimore County, 1000 Hilltop Circle, Baltimore, MD 21250. Information current as of October 2026 and subject to change.