Artificial Intelligence, MAI

Program Description

The Master in Artificial Intelligence (MAI) at Utah Tech University is a professionally oriented graduate program designed to prepare students to address complex, real-world problems through the application of artificial intelligence (AI) and machine learning (ML) methodologies. The program emphasizes rigorous, project-based learning in high-demand domains such as computer vision, natural language processing, intelligent agents, and generative AI. Through applied coursework and faculty-mentored projects, students will develop advanced competencies in designing, implementing, and deploying end-to-end machine learning pipelines for industry-driven challenges. The program is designed for industry professionals seeking to design, implement, and deploy AI tools in practice, rather than preparing students for a PhD program.
The MAI builds directly on the Post-Baccalaureate Certificate in Applied Artificial Intelligence and Machine Learning, which comprises the first 15 credits of the program and serves as a stackable credential within the degree. Five foundational courses (three lecture-based and two project-based courses) are included in the certificate, which are listed in the table of program-required courses. Five additional advanced courses will be introduced in the second year, which extend the applied emphasis of the certificate by guiding students toward domain-specific implementations such as Natural Language Processing and Computer Vision. Advanced Deep Learning will cover state-of-the-art architectures and optimization strategies in other domains. Students will integrate and apply AI techniques to real-world problems in two consecutive project courses. This structure provides students with an interim, workforce-relevant credential while maintaining a clear pathway toward the completion of the full master's degree. Compared with Utah Valley University's M.S. in Applied AI program, which targets business and management professionals with no technical background, the MAI program focuses on students with computing skills and emphasizes hands-on, technical AI tool development (refer to the similar program table for details).

Admissions Requirements

Applicants must meet the following minimum requirements:

- Complete the online application.
- A bachelor's degree from a regionally accredited institution in Computer Science, Engineering, Mathematics, or a related technical field. Or a bachelor's degree with a minimum of two years of Professional Software Development experience.
- English proficiency is required for applicants whose native language is not English, per Utah Tech graduate policy.

Students currently enrolled in the Post-Baccalaureate Certificate in Applied Artificial Intelligence and Machine Learning can progress into the MAI by submitting an internal form for program approval rather than a new application. The program will coordinate with Graduate Admissions and Operations to seamlessly enroll qualified certificate students in the master's program. The program will admit students as cohorts each fall to promote collaboration and continuity through shared projects.

Program Curriculum

30 Credits

Required Courses

Code	Title	Hours
CS 6300	Principles of Artificial Intelligence	3
CS 6310	Foundations of Machine Learning	3
CS 6320	Foundations of Deep Learning	3
CS 6350	Artificial Intelligence and Machine Learning Project 1	1-3
CS 6351	Artificial Intelligence and Machine Learning Project 2	1-3
CS 6321	Natural Language Processing	3
CS 6322	Computer Vision	3
CS 6323	Advanced Deep Learning	3
CS 6352	Artificial Intelligence and Machine Learning Project 3	1-3
CS 6353	Artificial Intelligence and Machine Learning Project 4 (Capstone)	1-3

Elective Course

Code	Title	Hours
CS 6359R	Artificial Intelligence and Machine Learning Independent Project	1-3

Graduation Requirements

1. The Master of Artificial Intelligence (MAI) will require completion of 30 graduate credit hours. The program is designed to be completed in six semesters (two calendar years) under a cohort model.
2. Maintain a 3.0 cumulative GPA in all graduate coursework.
3. Complete all coursework with a B- or higher.
4. At least 20 credits at Utah Tech University for residency.

NB: Up to 10 credits earned at an accredited institution may be transferred toward the degree upon program approval. Allowing limited transfer credit supports students transitioning from related graduate study while preserving Utah Tech's academic standards. The 30-credit total includes six lecture-based courses (18 credits) and four project-based courses (12 credits). The capstone will be the last project course (AI/ML project 4), with increased rigor that is cumulative across the series of project-based courses, without a separate standalone requirement. The delivery modality will be HyFlex.

Master in Artificial Intelligence Program Learning Outcomes

At the successful completion of this program, students will be able to:

1. Demonstrate technical competency in core artificial intelligence domains, including deep learning, generative AI, large language models, and intelligent systems.
2. Construct complete machine learning pipelines, encompassing data collection, preprocessing, model training, evaluation, and deployment.
3. Apply AI and ML techniques to diverse real-world problems across industries.
4. Communicate AI-driven solutions effectively using data visualization, model interpretability, and performance metrics to inform decision-making.
5. Incorporate ethical and responsible AI practices that promote fairness, transparency, and accountability in model development and deployment.