ARTIFICIAL INTELLIGENCE METHODS AND APPLICATIONS, B.S. (CAPITAL)

Seven Penn State campuses are scheduled for closure after Spring 2027: DuBois, Fayette, New Kensington, Mont Alto, Shenango, Wilkes-Barre, and York. New students are not being admitted at these campuses.

Begin Campus: Any Penn State Campus

End Campus: Harrisburg

Program Description

The Bachelor of Science in Artificial Intelligence Methods and Applications is an interdisciplinary program that will prepare students for careers in the rapidly advancing field of artificial intelligence (AI).

Graduates of this program will have strong foundations in core technical skills and AI methodology knowledge including Mathematics for AI, Programming for AI, Knowledge Representation and Inference, AI Problem Solving, and Socially Responsible AI. Additional elective courses will allow students to gain advanced AI technical skills, introduce them to specialized areas within AI and related fields, and broaden their knowledge in chosen application focus areas. The program integrates strengths across a broad range of areas of AI and related disciplines, e.g. computer science, information science, human-computer interaction, data sciences, psychology and cognitive sciences, social sciences, public policy and law, and is a truly innovative and interdisciplinary Bachelor of Science program in AI. Students in their final program year will complete a two-semester capstone course designed to offer practical experience in applying AI to real-world problems or a two-semester research project aimed to offer undergraduate research experience in AI. Students will also gain soft skills necessary for professional success through experiential learning and active participation in real-world projects and team collaboration.

What is Artificial Intelligence Methods and Applications?

The Artificial Intelligence Methods and Applications program integrates AI foundations and techniques, mathematics, computer science, psychology, public policy, and ethics to develop AI solutions for diverse domains. This program could be a great fit if you want to:

- Fundamentally transform diverse application domains through judicious applications of AI.
- Design AI systems that enhance human capacity for decision making, discovery, and creativity.
- Balance technical excellence with ethical reasoning, effective communication, and interdisciplinary collaboration.
- Lead responsible AI initiatives in organizations ranging from tech companies to research institutions, government agencies, and nonprofits.

AI is transforming industries, organizations, scientific discoveries, and society. Professionals with a strong foundation in AI technologies and a commitment to ethical and interdisciplinary thinking are in high demand. AIMA prepares students to tackle real-world problems with AI solutions while ensuring that solutions enhance human judgment, creativity, and well-being. The program balances core technical skills with communication, teamwork, and applied experience, helping students thrive in dynamic, AI-enabled environments. You'll learn:

- Core AI methods for automated problem-solving, knowledge representation, reasoning, and decision-making, natural language processing, multi-agent interaction, multimedia content generation, and coordination
- Skills for tackling real-world challenges such as imprecision and uncertainty, noisy data, eliciting stakeholder needs, managing their expectations, and scaling up solutions as needed
- Human-centered, responsible design, deployment, and governance of AI
- Interdisciplinary collaboration, learning to bridge technical and domain expertise across fields
- Communication skills for explaining AI opportunities and risks to diverse stakeholders

You Might Like This Program If...

- You're interested in how AI can analyze data to improve decision-making and expedite discovery in business and science.
- You enjoy developing algorithms, analyzing data, and creating AI models for real-world applications.
- You're excited about exploring the transformative power of AI in fields like software development, finance, health care, marketing, customer service, or transportation.