Master of Artificial Intelligence

Coming soon: The Master of Professional Studies in Artificial Intelligence will be renamed the Master of Artificial Intelligence.

PennState World Campus

A world of possibilities. Online.

Table of Contents

Master of Artificial Intelligence Program.....3

Curriculum.....4

Why Penn State World Campus?.....5

Stackable Graduate Certificates.....6

Begin Your Application Today.....7

"The CEO of Google regards artificial intelligence as more profound than electricity and the internet. It will impact every aspect of our lives, from making us coffee in the morning to driving us home at the end of the day. Between the explosion of data and the power of contemporary computing, we are at a point in time where we can build computing systems that can perceive their environment, reason about it, and make decisions that would otherwise require our attention and intellect.

Our program examines the technologies and theories at the heart of such systems and explores new ways to leverage them for competitive advantage and social benefit. This high-quality online program is delivered by outstanding faculty engaged in the research and application of AI and machine learning who have a proven track record of teaching in top-ranked online graduate programs."

—Youakim Badr,
Artificial Intelligence program

Earn a Master of Artificial Intelligence — Online

With recent advances in computing power and communications bandwidth and the ubiquity of internet-connected devices, artificial intelligence (AI) has emerged as an important discipline, driven heavily by the commercial availability of "smart" technologies and services. These advances correspond with the need for educated, qualified professionals who are capable of developing intelligent systems and exploring new frontiers in AI and machine learning.

The 33-credit master's degree in artificial intelligence offered entirely online through Penn State World Campus provides a professional, technical education in developing and deploying AI and machine learning. This interactive program is designed to be a challenging, engaging, and collaborative learning experience, shared with expert faculty and motivated peers.

Students in the program will:

- learn the three types of machine learning algorithms used to evaluate data: supervised learning, unsupervised learning, and reinforcement learning
- explore natural language processing, the area of study concerning how machines comprehend and synthesize speech and text
- gain knowledge of machine vision, which is how computers can perceive their visual environment and perform automatic inspections and analyses

Full-time Penn State professors, whose teaching and research combine academic expertise and industry experience, teach the courses and serve as advisers for the students. They are leaders in their fields and experts in the subjects they teach and are instrumental in research in machine vision, deep learning, natural language processing, and AI security.

Career Opportunities

Earning this degree can help graduates obtain employment in multiple fields — including business, technology, finance, government, and manufacturing — holding positions such as:

- AI data scientist
- AI researcher
- AI application engineer
- natural language processing expert
- computer vision expert
- machine learning engineer
- software analyst and developer
- software engineer
- user experience specialist and designer

Curriculum

The curriculum for the Master of Artificial Intelligence is designed to help students engage and develop knowledge in numerous areas of AI, including:

- natural language processing
- machine learning
- computer vision
- deep learning
- reinforcement learning
- ethics of artificial intelligence

Students in this innovative program will use state-of-the-art tools and relevant data sets to solve real-world problems, building knowledge and experience that can be used immediately in the workplace.

As a capstone experience, students will apply the knowledge, theories, methods, and processes learned throughout the program and use an AI learning technique to train and test a prototype to determine if it could be deployed as a working system.

Because many of our students are working professionals who have other commitments, the curriculum is designed to provide the flexibility needed to balance both personal and professional schedules. You can finish the program in as little as two years, based on the successful completion of two courses each semester.

Why Penn State World Campus?

Penn State World Campus is an industry leader in online education, delivering more than 175 undergraduate and graduate degree and certificate programs to adult learners. Our mission is to provide the real Penn State educational experience, focused on convenience, flexibility, and quality. We have teams of professionals focused solely on providing students with the custom academic and support services they need to succeed.

› Reputation of excellence

Putting a Penn State degree or certificate on your résumé is a great way to broaden your career options and prove to employers that you are a well-educated professional.

› Flexibility and convenience

Penn State knows that adults need flexible and convenient learning options in order to continue meeting their professional and personal commitments. You can study when and where you please, earning your credential at the pace that makes sense for you.

› Student support services

As a Penn State World Campus student, you will be supported by a team of knowledgeable and caring staff who understand the unique challenges of balancing work and personal responsibilities while learning online. You will have access to traditional student support services, such as 24/7 technical support, career services, and a dedicated student affairs team, along with access to the University Libraries system and the opportunity to join online clubs and organizations.

› Military and veteran students

We have aligned our online programs, student support services, policies, and procedures to support military personnel, veterans, and military family members.

Stackable Graduate Certificates

You can earn three valuable graduate certificates to recognize your new skills and knowledge while you work toward your master's degree — without any additional course work, course fees, or application fees. Stackable credentials are a great way to gain new skills, update your résumé, and accelerate the ROI of your master's program. These certificates can be earned on their own and also applied toward the 33-credit Master of Artificial Intelligence.

Graduate Certificate in Foundations of Artificial Intelligence

This 12-credit certificate focuses on the foundations of artificial intelligence, including machine learning and intelligent agents. The certificate explores the process of identifying AI–related problems and then developing data-centric, AI-based systems and solutions using predictive analytics and statistical capabilities. It can serve as the foundation upon which you build ever richer AI skills.

Graduate Certificate in Natural Language Processing

This 9-credit certificate focuses on the interaction between computers and human language. In this program, you will explore the following topics: designing and training deep neural networks, identifying natural language processing (NLP) tasks and problems (i.e., language translation, chatbots, speech recognition, language models, etc.), designing NLP pipelines to collect and preprocess textual data, and evaluating ethics and fairness in AI systems. It is recommended that you complete the Graduate Certificate in Foundations of Artificial Intelligence prior to starting this program.

Graduate Certificate in Computer Vision

This 9-credit certificate focuses on the design and application of computer-based, machine vision systems that can interpret visual information and make decisions. In this program, you will explore the following topics: identifying computer vision tasks and problems (image classification, object detection, image segmentation, activity detection, etc.), designing computer vision pipelines to collect and preprocess images and videos, implementing advanced data visualization, and building and deploying reinforcement learning for self-autonomous vehicles with computer vision models.

Please note, in addition to completion of the three certificate programs, you must also complete a 3-credit capstone experience to earn your master's degree.

Begin Your Application Today

To be considered for admission, prospective students should submit an online application form and a complete application portfolio. Admissions decisions for the Master of Artificial Intelligence are based on a review of your complete application portfolio and the quality of your credentials relative to those of other applicants.

Your master's degree application portfolio must include:

- application form (completed and submitted online)
- copy of official transcripts from each undergraduate and graduate institution attended
- references
- statement of purpose
- résumé
- TOEFL or IELTS score, if applicable

GRE/GMAT test scores are not required.

For application deadlines and up-to-date details about the program and admissions process, visit: **worldcampus.psu.edu/ai**

Did You Know?

- Penn State World Campus is consistently ranked as a top provider of online education by *U.S. News & World Report.*
- Penn State World Campus has enrolled students from all 50 states and all 7 continents.
- Our online courses involve frequent interactions among students and faculty.

Contact Us

Admissions Questions

worldcampus@psu.edu
Phone: 814-863-5386
worldcampus.psu.edu/admissions

Program Questions

artificialintelligence@psu.edu

PennState
World Campus

The Pennsylvania State University
128 Outreach Building
University Park, PA 16802

@psuworldcampus

@PSUWorldCampus

Penn State World Campus

@pennstateworldcampus

This publication is available in alternative media on request.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability or protected veteran status. Produced by Outreach and Online Education Marketing UBR 24-WC-14836950/jlm/sss

Copyright © 2024 The Pennsylvania State University