

# Applied AI, MPS (Portland)

Humankind is on the threshold of a new era—an age of artificial intelligence as revolutionary in its global impact as the Industrial Revolution. The Master of Professional Studies in Applied AI program offers working professionals operational immersion and firsthand experiences with an end-to-end AI education that aims to prepare students proactively and thoughtfully for the evolving technology landscape and its challenges. The curriculum focuses on building and implementing AI and machine learning technologies, specializing in conversational AI, machine learning for cybersecurity, 3D imaging, and various electives. This comprehensive approach ensures that students are equipped with the skills and knowledge needed to stay ahead in the rapidly changing field of AI.

## Program Requirements

Beginning with students admitted in the fall of 2026, all students pursuing on-ground master's degree programs must complete a university-level experiential learning requirement. This requirement may be fulfilled through the curriculum, co-op, or other work- or industry-integrated learning experiences.

## Core Courses

| Code                                          | Title                               | Hours |
|-----------------------------------------------|-------------------------------------|-------|
| Complete the following:                       |                                     |       |
| AAI 6600                                      | Applied Artificial Intelligence     | 3     |
| AAI 6610                                      | Applied Machine Learning            | 3     |
| AAI 6620                                      | Applied Natural Language Processing | 3     |
| AAI 6630                                      | Applied Computer Vision             | 3     |
| <b>Restricted Electives</b>                   |                                     |       |
| Complete 6 semester hours from the following: |                                     | 6     |
| AAI 6640                                      | Applied Deep Learning               |       |
| AAI 6650                                      | Recommender System                  |       |
| AAI 6655                                      | Prompt Engineering                  |       |
| AAI 6665                                      | Generative Artificial Intelligence  |       |
| AAI 6740                                      | Applied Reinforcement Learning      |       |
| AAI 6790                                      | Applied Quantum AI                  |       |
| AAI 6850                                      | Applied Blockchain AI               |       |
| AAI 6900                                      | AI for Autonomous Systems           |       |
| AAI 6983                                      | Special Research Topics in AI       |       |
| <b>Capstone</b>                               |                                     |       |
| AAI 6980                                      | Integrated Experiential Capstone    | 4     |

## Concentration or Electives Option

A concentration is not required. Students may complete the electives option in lieu of a concentration.

- AI for 3D Imaging ([https://catalog.northeastern.edu/programadmin/1494/#AI\\_for\\_3D](https://catalog.northeastern.edu/programadmin/1494/#AI_for_3D))
- Conversational AI and Chatbots ([https://catalog.northeastern.edu/programadmin/1494/#conversational\\_ai\\_chatbots](https://catalog.northeastern.edu/programadmin/1494/#conversational_ai_chatbots))
- Machine Learning for Cybersecurity ([https://catalog.northeastern.edu/programadmin/1494/#machine\\_learning\\_for\\_cybersecurity](https://catalog.northeastern.edu/programadmin/1494/#machine_learning_for_cybersecurity))
- Electives Option ([https://catalog.northeastern.edu/programadmin/1494/#electives\\_option](https://catalog.northeastern.edu/programadmin/1494/#electives_option))

## Optional Experiential Learning Opportunities

The College of Professional Studies encourages its students to incorporate optional experiential learning opportunities in their academic plans.

| Code                                                                                                                       | Title                                  | Hours |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------|
| <b>Co-op</b>                                                                                                               |                                        |       |
| This option requires 1 additional semester hour of credit and tuition in addition to this program's required credit hours. |                                        |       |
| INT 6200                                                                                                                   | Experiential Project Preparation       | 1     |
| COP 6945                                                                                                                   | Co-op Work Experience—Full Time        | 0     |
| or COP 6946                                                                                                                | Global Co-op Work Experience—Full Time |       |
| or COP 6954                                                                                                                | Co-op Work Experience - Half-Time      |       |

## Integrative Experiential Learning

This option substitutes for 3 semester hours of restricted elective credits in programs that require at least 3 semester hours of restricted elective credits. If the student has already completed the program's restricted electives or the program does not have an elective requirement, this option requires 3 additional hours of credit and tuition in addition to this program's required credit hours.

INT 6943 Integrative Experiential Learning 3

## Program Credit/GPA Requirements

34 total semester hours required

Minimum 3.000 GPA required

### AI FOR 3D IMAGING CONCENTRATION

| Code                           | Title                                     | Hours |
|--------------------------------|-------------------------------------------|-------|
| Complete the following:        |                                           |       |
| AAI 6710                       | Graph Signal Processing                   | 3     |
| AAI 6720                       | Graph Neural Networks                     | 3     |
| AAI 6730                       | Deep Learning for 3D Point Cloud Analysis | 3     |
| Complete one of the following: |                                           | 3     |
| AAI 6640                       | Applied Deep Learning                     |       |
| AAI 6650                       | Recommender System                        |       |
| AAI 6665                       | Generative Artificial Intelligence        |       |
| AAI 6740                       | Applied Reinforcement Learning            |       |
| AAI 6790                       | Applied Quantum AI                        |       |
| AAI 6850                       | Applied Blockchain AI                     |       |
| AAI 6900                       | AI for Autonomous Systems                 |       |

### CONVERSATIONAL AI AND CHATBOTS CONCENTRATION

| Code                          | Title                              | Hours |
|-------------------------------|------------------------------------|-------|
| Complete the following:       |                                    |       |
| AAI 6660                      | Chatbot Architecture               | 3     |
| AAI 6670                      | Chatbot Application                | 3     |
| Complete two of the following |                                    | 6     |
| AAI 6640                      | Applied Deep Learning              |       |
| AAI 6650                      | Recommender System                 |       |
| AAI 6655                      | Prompt Engineering                 |       |
| AAI 6665                      | Generative Artificial Intelligence |       |
| AAI 6740                      | Applied Reinforcement Learning     |       |
| AAI 6790                      | Applied Quantum AI                 |       |
| AAI 6850                      | Applied Blockchain AI              |       |
| AAI 6900                      | AI for Autonomous Systems          |       |

### MACHINE LEARNING FOR CYBERSECURITY CONCENTRATION

| Code                           | Title                               | Hours |
|--------------------------------|-------------------------------------|-------|
| Complete the following:        |                                     |       |
| AAI 6680                       | AI for Cybersecurity                | 3     |
| AAI 6690                       | Machine Learning for Cyberdetection | 3     |
| Complete two of the following: |                                     | 6     |
| AAI 6640                       | Applied Deep Learning               |       |
| AAI 6650                       | Recommender System                  |       |
| AAI 6665                       | Generative Artificial Intelligence  |       |
| AAI 6740                       | Applied Reinforcement Learning      |       |
| AAI 6790                       | Applied Quantum AI                  |       |
| AAI 6850                       | Applied Blockchain AI               |       |
| AAI 6900                       | AI for Autonomous Systems           |       |

ELECTIVES OPTION

| Code                                                                                                                                                                                                    | Title | Hours |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|
| Complete any College of Professional Studies graduate-level courses, unused courses in this program, or a combination of both in lieu of a concentration to meet total program required semester hours. |       |       |