PURDUE UNIVERSITY | Elmore Family School of Electrical and Computer Engineering

Engineering Faculty Document No. EFD 94-24
February 29, 2024

Memorandum

To: The College of Engineering Faculty

From: The Elmore Family School of Electrical and Computer Engineering

Re: revision to the Artificial Intelligence and Machine Learning Minor

The faculty of the Elmore Family School of Electrical and Computer Engineering has approved the following revisions of the Artificial Intelligence and Machine Learning Minor from the College of Engineering. This action is now submitted to the Engineering Faculty with a recommendation for approval.

FROM:

Minor Requirements (16 credits)

Required Course (3 credits)
- ECE 20875 – Python for Data Science

Core Courses – Choose Two (6 credits)
- ECE 26400 – Advanced C Programming
- ECE 30100 – Signals and Systems
- ECE 30200 – Probabilistic Methods in ECE
- ECE 35800 – Data Structures
- ECE 36900 – Discrete Mathematics for Computer Engineering

Selective Courses – Choose Two (6 credits)
- ECE 43800 – Digital Signal Processing with Applications
- ECE 47300 - Introduction To Artificial Intelligence or
- ECE 50024 - Machine Learning
- ECE 56900 - Introduction To Robotic Systems
- ECE 39595/49595/59500 - Selected Topics In Electrical And Computer Engineering:
  - ECE 49595 - Cameras, Imaging and Statistical Inverse Problems
  - ECE 49595 - Data Mining Basic Concepts and Techniques
  - ECE 59500 - Introduction to Data Mining
  - ECE 59500 – Introduction to Deep Learning
  - ECE 59500 - Deep Learning for Computer Vision
  - ECE 59500 - Natural Language Processing

ELMORE FAMILY SCHOOL OF ELECTRICAL AND COMPUTER ENGINEERING
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TO:

Minor Requirements (16 credits)

Required Course (3 credits)

ECE 20875 – Python for Data Science

Core Courses – Choose Two (6 credits)

ECE 26400 – Advanced C Programming
ECE 30100 – Signals and Systems
ECE 30200 – Probabilistic Methods in ECE
ECE 35800 – Data Structures
ECE 36900 – Discrete Mathematics for Computer Engineering

Selective Courses – Choose Two (6 credits)

ECE 40875 - Data Mining Basic Concepts and Techniques or
ECE 59500 - Introduction to Data Mining
ECE 43800 – Digital Signal Processing with Applications
ECE 47300 - Introduction To Artificial Intelligence or
ECE 50024 - Machine Learning
ECE 56900 - Introduction To Robotic Systems
ECE 39595/49595/59500 - Selected Topics In Electrical And Computer Engineering:
ECE 39595 – Data Science Labs Fourier Analysis
ECE 39595 – Data Science Labs Probability
ECE 49595 - Cameras, Imaging and Statistical Inverse Problems
ECE 49595 – Introduction to Reinforcement Learning
ECE 49595 - Natural Language Processing
ECE 49595 – Undergraduate Computer Vision
ECE 59500 - Deep Learning for Computer Vision
ECE 59500 – Introduction to Deep Learning
ECE 59500 - Natural Language Processing

Reason: The area added a few courses as well as some experimental courses have obtained permanent numbers.

T. S. Mithuna

Mithuna Thottethodi
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Professor of Electrical and Computer Engineering

Purdue University 2023-2024 University Catalog

Artificial Intelligence/Machine Learning Minor

About the Minor

The Artificial Intelligence and Machine Learning minor gives students a grounding in the fundamental concepts underlying modern AI and Machine Learning approaches and systems. It covers both the mathematical background as well as programming, and allows students to branch out and draw on courses across the spectrum of AI and ML topics.

Requirements for the Minor (15 credits)

Required Course (3 credits)

- ECE 20875 - Python For Data Science

Core Courses - Choose Two: (6 credits)

- ECE 26400 - Advanced C Programming
- ECE 30100 - Signals And Systems
- ECE 30200 - Probabilistic Methods In Electrical And Computer Engineering
- ECE 36800 - Data Structures
- ECE 36900 - Discrete Mathematics For Computer Engineering

Selective Courses - Choose Two: (6 credits)

ECE 40875

- ECE 43800 - Digital Signal Processing With Applications
- ECE 47300 - Introduction To Artificial Intelligence
- ECE 49595 - Selected Topics In Electrical And Computer Engineering Titles: Data Mining Basic Concepts & Techniques; Cameras, Images, and Statistical Inverse Problems
- ECE 50024 - Machine Learning
- ECE 56900 - Introduction To Robotic Systems
- ECE 59500 - Selected Topics In Electrical Engineering Titles: Intro to Deep Learning; Deep Learning for Computer Vision; Natural Language Processing; Introduction to Data Mining

Notes

* new CVS.

- In addition to the course pre-requisites, the student's cumulative GPA must be a minimum of 3.0 at the time of application. A minimum ECE GPA of 3.0 is required to complete the minor.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

Note that students no longer have to complete the app. their adv. can add.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

MINOR IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

General Requirements:

- Prior to adding the AIML minor, the student must have a grade of C- or better in each of the following courses: MA 16500, MA 16600, PHYS 17200 and CS 15900 (or their equivalents)
- All pre-requisites for the below listed courses must be followed. Transfer and AP credit will be accepted
- A minimum overall GPA of 2.00 is required in ECE courses to qualify for the minor. Approval of the AIML minor may be revoked if the ECE GPA falls below 2.00.
- Enrollment in all ECE courses is subject to space availability.

Requirements for the AIML Minor (18 credits)

Required Course (3 credits):

- ECE 20875 Python for Data Science

A minimum of two courses must be completed from each of the below sections; however, combined with the above required course, all must total 18 credits. This means that a third course will need to be completed from at least one of the sections below.

Core courses (6 credits):

- ECE 26400 Advanced C Programming
- ECE 30100 Signals and Systems
- ECE 30200 Probabilistic Methods in Electrical and Computer Engineering
- ECE 36800 Data Structures
- ECE 36900 Discrete Mathematics for Computer Engineering

Elective Courses (6 credits):

- ECE 40875 Data Mining Basic Concepts and Techniques **OR** ECE 50836 Intro to Data Mining
- ECE 43800 Digital Signal Processing with Applications
- ECE 47300 Introduction to Artificial Intelligence **OR** ECE 57000 Artificial Intelligence
- ECE 50024 Machine Learning
- ECE 56900 Introduction to Robotic Systems
- ECE 39595/49595/59500 Selected Topics in Electrical Engineering Qualifying Titles:
    - ECE 39595: Data Sci Labs Fourier Analysis
    - ECE 39595: Data Sci Labs for Probability
    - ECE 49595: Cameras, Images and Statistical Inverse Problems
    - ECE 49595: Intro to Reinforcement Learning
    - ECE 49595: Natural Language Processing
    - ECE 49595: Undergraduate Computer vision
    - ECE 59500: Deep Learning for Computer vision
    - ECE 59500: Intro to Deep Learning
    - ECE 59500: Natural Language Processing