

COMP/EECE 4720/6720

Introduction to Artificial Intelligence

Spring 2026

Class Location: Room 124, Dunn Hall

Class Time: Mon/Wed, 12:40pm-2:05pm

Instructor: Haomiao Ni, Ph.D.

- Email: hni@memphis.edu
- Office: Room 131, Dunn Hall

TA: Yanliang Qi (yqi2@memphis.edu)

Office Hour: Scheduled by appointment

Objective: This course will explore fundamental AI technologies, focusing on deriving intelligence from data through probabilistic reasoning and machine learning and exploring advanced AI topics. By the end of this course, students will have the skills to apply AI techniques effectively to practical problems and critically evaluate the performance of these techniques.

Prerequisites: Python (**required** in assignments), Calculus, Linear Algebra, Probability, Algorithm Design and Data Structure.

Topics:

Part 0: Introduction to AI

Part 1: Probabilistic Reasoning

- Probability
- Bayes Nets

Part 2: Machine Learning

- Classification & Naive Bayes
- Perceptron
- Logistic Regression & Linear Regression
- Optimization & Neural Networks
- SVM & Kernel
- Decision Tress
- KNN
- Clustering & K-Means

Part 3: Advanced AI Topics

- Computer Vision (CNN)

Course Reference:

- Russell, Stuart J., and Peter Norvig. Artificial intelligence: a modern approach. Pearson, 2016. (Website: <https://aima.cs.berkeley.edu/>, 3rd version PDF from [GitHub](#))
- Goodfellow et al. Deep Learning, MIT Press, 2015 (PDF from [GitHub](#))
- Pattern Recognition and Machine Learning, Chris Bishop, Springer-Verlag, 2006 (PDF from [GitHub](#))

Evaluation and Final Grades:

- **Attendance: 10%**
- **Assignments: 50%**
- **In-Class Exams: 40%**
- **Bonus Points:** Up to 5 points
- **For 6720 students:** extra questions/coding tasks in each assignment

Course Policies:

- All homework must be individual work.
 - Allowed: discussing ideas and strategies with others.
 - **Not** allowed: copying others' code or written solutions.
 - *Conditionally* allowed: Using generative AI tools (e.g., ChatGPT, Copilot), under the following conditions:
 - You must clearly disclose which tools were used and how they were used.
 - You must fully understand and be able to explain all submitted content.
 - You could **not** submit AI-generated content verbatim without review or modification.
- Do **not** share course materials (including slides, assignments, or solutions) in any public forum (e.g., GitHub or other public repositories). This restriction applies during and after the semester.
- Academic integrity is strictly enforced. Any suspected violations will be reported to the Center for Student Conduct and may result in point deductions, a zero on the assignment, or a failing grade for the course.
- Grading concerns: Any grading errors on assignments or exams must be reported to the TA within one week of receiving the grade.
- Late submissions: A **5% deduction** per day will be applied to late assignments. Submissions more than **7 days** late will not be accepted.