Course Syllabus - Fall 2024
CS 375: Introduction to Machine Learning

Instructor: Dr. Yajuan Li
Email: yajuan.li@njit.edu
Office: GITC 4309
Office Hours: Monday 11:40-1:10 pm (Office), 1:40-3:10 pm (Zoom)

Course Overview:
This introductory course to Machine Learning (ML) provides a smooth, example-based presentation of the fundamental notions of ML via simple algorithms and visualizable data sets. It also explores a selection of widely used machine learning algorithms across different types of ML techniques, with practical applications on real-world data sets. The students are expected to implement basic algorithms and experiment with popular ML software libraries on provided datasets. They will also gain exposure to the full development of an ML system via a course project.

Course Outcomes:
- Understand the fundamental concepts of ML.
- Recognize suitable applications for different types of ML.
- Implement various machine learning algorithms
- Interpret and evaluate the results of ML models.
- Apply ML algorithms to real-world datasets.
- Utilize essential ML tools and libraries for problem-solving.

Prerequisite: CS 100 and (CS 113 or CS 115) and (MATH 333 or MATH 341) with a grade of C or better.

Textbooks (optional):
- Introduction to Machine Learning with Python: A Guide for Data Scientists 1st Edition by Andreas Müller, Sarah Guido.

Attendance
Class attendance is mandatory. Getting to class late or leaving early counts as half an absence. If you have special circumstances that prevent you from attending class, you must provide documentation to the dean of students for your absence to be excused.

Class Participation
Active class participation, including asking and answering questions and engaging in classwork activities, is an integral component of our course. Classwork assignments will be assigned during lectures and will contribute to your class participation grade. You can work on these assignments individually or in groups (up to a maximum of two individuals). When collaborating in a group, please designate one representative to submit the work through the Canvas platform, ensuring that both names are included on the submitted assignment to receive credit. It's important to note that late submissions will not be accepted. All classwork

should be completed during the class session unless there are exceptional circumstances, such as jury duty or a medical issue. In such cases, verification from the Dean of Students is required.

Please ensure that you come prepared with your laptop or device to complete assigned class work.

During class, kindly ensure that mobile phones are powered off. Additionally, it is expected that during class hours, activities such as gaming, texting, emailing, web browsing, or any other unrelated activities are refrained from, and the focus remains on the class content.

Late Policies
(1) Homework and the project must be submitted through Canvas by the specified due date unless otherwise specified in class. It will not be accepted late.
(2) Students can get an extended deadline only if they have special/emergency reasons verified by the Dean of Students. https://www.njit.edu/dos/student-excusals

There will be NO EXCEPTION to these late policies. Please manage your time appropriately.

Exam Policies
There will be one midterm (Week 7) and one final exam (Week 14). Be sure that you will be present for all your exams. Respondus LockDown Brower and Monitor may be used to monitor and proctor the test, and all students are required to have a working webcam to take the exam. More information about Respondus Lockdown Browser can be found at https://web.respondus.com/student-help/

You must bring a student ID to all exams. There are no late submissions or makeup for exams. Students who have special/emergency reasons to reschedule exams must apply and get approval for testing accommodation from the Office of Accessibility Resources and Services before the exams. https://www.njit.edu/accessibility/requesting-testing-accommodations

Grading Scale:

Grade	A	B+	B	C+	C	D	F
Overall Course Score	≥ 90	[85, 90)	[80, 85)	[75, 80)	[70, 75)	[60, 70)	<60

Final grades are based on the above tentative grading scale. I reserve the right to change the scale as the need arises.

Grading Breakdown:
- Attendance: 5%
- Assignments: 25%
- Project: 20%
- Midterm Exam: 20%
- Final Exam: 30%

Tentative Course Topics (Subject to changes according to progress)
- Introduction to machine learning

- Python libraries and tools
- Supervised learning algorithms
- Unsupervised learning algorithms
- Reinforcement learning techniques
- Representing data and engineering features
- Model evaluation and improvement
- Example machine learning applications

Collaboration and Honor Code

Each student is responsible for his/her own work. Students may discuss problems together but must write up their own solutions. When writing up the solutions, students should write the names of people, if any, with whom they discussed the assignment. Note that copying homework or programming assignments, in full or in part is forbidden. Students found cheating or plagiarizing will be immediately referred to the Dean of Students and the NJIT Committee on Professional Conduct and subject to Disciplinary Probation, a permanent marking on the record, possible dismissal, and an "F" grade in the course. All submitted assignments will be checked for similarities, and plagiarism and guilty students identified. In the exam, each student is required to sign the Honor Code Agreement "On my honor, I pledge that I have not violated the provision of the NJIT Student Honor Code."

University Policy on Academic Integrity
"Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu"

Generative AI

Generative AI tools, such as ChatGPT, are permitted in this course only if explicitly authorized by the instructor for a specific assignment. The student is fully responsible for the integrity and accuracy of all submitted work. If permitted Generative AI tools produce incorrect results that are incorporated into the submission, the student will be graded based on the accuracy of the submitted work. Errors made by AI tools are solely the responsibility of the student.

*Students will be notified in class of any changes to the syllabus.