

Introduction to Machine Learning

CS 171

Spring 2026 Section 03 In Person 3 Unit(s) 01/22/2026 to 05/11/2026 Modified 01/25/2026

Contact Information

Instructor: Mira Jane

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Office Hours

Monday, Wednesday, 4:30 PM to 5:30 PM, DH 282

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Course Information

Lectures

Monday, Wednesday, 3:00 PM to 4:15 PM, MH 224

In-person only

Course Description and Requisites

Covers a selection of classic machine learning techniques including backpropagation and several currently popular neural networking and deep learning architectures. Hands-on lab exercises are a significant part of the course. A major project is required.

Prerequisite(s): CS 146 (with a grade of "C-" or better). Computer Science or Software Engineering majors only.

Letter Graded

Classroom Protocols

- Regular attendance and participation is an integral part of the learning process. You are encouraged to ask questions and respond to questions from the instructor and other students.
- Please arrive to class on time and make sure your cell phones are silent during the lecture.
- Class time will be spent in interactive lecture.
- You are required to bring your wireless laptop to class. Your laptop must remain closed except for designated activities.
- The lockdown browser is needed for assignments / quizzes.
- We will use in-class short quizzes to allow everyone to participate, gather feedback, and check understanding of the material.
- No photography/audio/video recording permitted in the classroom.

Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

Course Learning Outcomes (CLOs)

The focus of this course will be an introduction the ML foundations. The course will also involve hands-on experience with building ML models using various techniques. At the successful completion of the course, the students will be able to:

- Understand basic ML concepts.
- Understand Linear Regression.
- Understand Linear classification.
- Understand Decision Trees and Random Forests models.
- Be able to build simple Multi-Layer Perceptron models.
- Understand deepnets training fundamentals.
- Understand and build models with CNN.
- Understand and build models with RNN.
- Understand and build models for Natural Language Processing.
- Understand and build Transformer models.
- Explain AI Ethics and Philosophy concepts.

Course Materials

Hands-On Machine Learning with Scikit-Learn and PyTorch

Author: Aurélien Géron

Publisher: O'Reilly Media, Inc.

Year: 2025

ISBN: 979-8341607989

This textbook also has very helpful [online colabs](#) (<https://colab.research.google.com/github/ageron/handson-mlp/blob/main/index.ipynb>).

✓ Grading Information

Grading will be on a **curve** on the total weighted sum:

- In-class participation: 5%
- In-class quizzes: 25%
- In-class assignments: 20%
- In-class mid term exam: 20%
- In-class cumulative final exam: 30%, Wed, May 13, 3:15-5:15 PM

Academic Honesty

All work must be yours only, no collaboration allowed, no use of AI/ML tools allowed unless the question specifically asks to use such tools.

☰ University Policies

Per [University Policy S16-9 \(PDF\)](#) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the [Syllabus Information](#) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>) web page. Make sure to visit this page to review and be aware of these university policies and resources.