

Machine Learning

Winter 2018-2019

Course description:

This course provides an introduction to machine learning. Machine learning explores the study and construction of algorithms that can learn from and make predictions on data. Such algorithms operate by building a model from example inputs in order to make data-driven predictions or decisions, rather than following strictly static program instructions.

Topic categories include supervised, unsupervised, and reinforcement learning. Students will learn how to apply machine learning methods to solve problems in computer vision, natural language processing, classification, and prediction. Fundamental and current state-of-the-art methods including boosting and deep learning will be covered. Students will reinforce their learning of machine learning algorithms with hands-on tutorial oriented laboratory exercises using Jupyter Notebooks.

See GitHub repository for current course description, prerequisites, outcomes, References, course outline and course materials.

<https://github.com/jayurbain/machine-learning>

- Grading
 - Midterm - 20%
 - Final - 30%
 - Labs and Quizzes– 50% (A full 2-week lab is weighted 2x)
- Assignments
 - Submit to Blackboard.
 - Follow submission instructions for each assignment.
 - Reports, lab feedback in PDF, zip multiple artifacts.
 - Individual or group (permission for groups)
- If anything is unclear - ask!
- Through your feedback course topics and assignments will be adjusted to improve the course.
- If there is a topic that you are especially interested in, please let me know.

Guidelines

Class attentiveness and participation is required. Laptop or cell phone use that is not related to the class activities is not allowed.

Completing lab assignments in timely fashion is vital to success in the course. Lab assignments reinforce topics covered in class and prepare students for exams.

- Assignments submitted within 1-week of due date – 20% penalty.
- Assignments submitted \geq 1-week of date – zero credit.

Unless stated otherwise, labs are due prior to the start of the following week's lab.

Quizzes will be announced at least 1-day in advance and may *or* may not be graded. The goal here is to test knowledge of basic concepts from lecture and lab.

You are expected to attend class. *Questions* in-person and online are used to provide a quick assessment of your understanding *and* to assess attendance.

You are responsible for assignments and announcements made in class or lab. In addition, you should regularly check the course outline, your MSOE email, and Blackboard for course materials, assignments, grades and feedback.

It is your responsibility to be present for all exams. Please contact me **in advance** if you have a valid conflict with a scheduled exam. Final exams will be comprehensive.

Academic integrity is expected. Sharing ideas and asking questions is strongly encouraged, however cheating on an exam, or submitting programming assignments that is not your own work will result in a grade of zero.

If you have any special needs, please let me know.

I'm interested in your feedback on how I can make this course better. Feel free to stop by my office, send me email, or drop an anonymous note in my department mailbox with suggestions on how I can make this a better class for you. Please don't wait until evaluation time because I won't see those comments until the quarter is over.

Good Luck.