

MTH 496-001: Machine Learning

Instructor: Duc Nguyen – ddnguyen@math.msu.edu
Office: C309 Wells Hall
Office Hours: Fridays from 4:00pm – 5:30pm and by appointment

Instructor: Guowei Wei – wei@math.msu.edu
Office: D301 Wells Hall
Office Hours: Fridays from 4:00pm –5:00pm and by appointment

Grader: Nathan Brugnone– brugnone@msu.edu
Office: 1515 Engineering Building
Office Hours: Wednesdays from 1:30pm –2:30pm and by appointment.

Course Schedule: Lectures - MWF from 9:10 – 10:00 AM in A324 Wells Hall

Course Description: This is an introductory course to Machine Learning (ML). ML is a powerful technique widely used in many big data areas such as insurance, economics, bioinformatics, medicine, face recognition etc. In this course, we will not only discuss theoretical framework of ML algorithms and architectures, but also put an emphasis on programming skills so that each student is able to implement ML algorithms for real-world problems. The tentative topics will cover linear regression, logistic regressions, decision trees, SVM and KNN. If time allows, more advanced methodologies such as random forests, gradient boosting trees and deep neural networks will be discussed.

Prerequisites: Approval of the department; though helpful courses will be (CSE 131 or CSE 231), (MTH 235 or MTH 340), MTH 309, MTH 360, STT 441 and STT 442.

Text: There is no required text for this course.

Attendance: Attendance is not required but is STRONGLY encouraged.

Homework: There will roughly be 3-4 homework “assignments” (essentially coding projects) throughout the course. Each coding project will be graded as a percent and the average of these grades will be your total homework grade. Homework will be weighted at 30% of your total course grade.

Exams: There are no exams for this course.

Final Project: There will be a final project including presentation (worth 30% of your total grade, evaluated by peers) and written report, including codes (worth 40% of your total grade). Students will choose their projects from a course project database. The due date of the final project is **April 13**. However, one can improve one’s final project results and score before April 30 by implementing the feedbacks from instructors.

Grading Scale: Your total grade will be the weighted average of your homework (30%), presentation (30%), and the written report (40%). The grade you receive will be no stricter than this scale:

Percentage (P) %	Grade
$90 \leq P$	4.0
$85 \leq P < 90$	3.5
$80 \leq P < 85$	3.0
$75 \leq P < 80$	2.5

$70 \leq P < 75$	2.0
$65 \leq P < 70$	1.5
$60 \leq P < 65$	1.0
$P < 60$	0

Academic Accommodations:

If you require academic accommodations through a disability or ailment as deemed by the RCPD office (Resource Center for Persons with Disabilities), please bring us your visa as soon as possible. If you feel that you are qualified for an accommodation, but you have not already done so, please visit the RCPD office immediately.

You may schedule a visitation or find other information out about the office or the accommodations in general by visiting:

<https://www.rcpd.msu.edu>

You may also visit the office directly at:

Bessey Hall
434 Farm Lane, #120

Or by calling:

(517) 884-RCPD (4-7273)

Academic Honesty: For full details please visit:

<https://www.msu.edu/~ombud/academic-integrity/index.html>

The simple explanation is DO NOT CHEAT. This contains but is not limited to copying another student's work during an exam or using an electronic device to gain an unfair advantage during these evaluations. You may receive a zero on the exam, a zero for the course, and up to expulsion from the University. Again, the simple explanation is DO NOT CHEAT and do not put yourself in that position.

Important dates for Spring 2018:

1/8/2018	Classes Begin
1/8/2018	Late Enrollment Fee (\$100) Begins
1/12/2018	Application for Graduation Deadline
1/12/2018	CR/NC or Visitor Change Deadline
1/12/2018	Open Add Period Ends
1/15/2018	Holiday - University Open, Classes Cancelled
2/2/2018	Tuition Refund Period Ends
2/28/2018	Middle of Semester - deadline to drop full-semester courses for the Spring semester with no grade reported
3/1/2018	Late Enrollment Fee (\$200) Begins
3/5/2018 – 3/9/2018	Spring Break

3/26/2018 Open Enrollment Begins (For Summer 2018)

4/27/2018 Classes End

4/30/2018 – 5/4/2018 Final Exams

The final exam is on Thursday, May 3 from 7:45am – 9:45am in 2243 Engineering Building.

5/4/2018 – 5/6/2018 Commencements

5/8/2018 Grades Due

More information at: <https://reg.msu.edu/ROInfo/Calendar/Academic.aspx>