



Syllabus

Machine Learning (Comp 379/488)

Fall 2017

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Office Hours: Tuesday/Thursday, 4:00-5:00 (prior arrangement requested)

Catalog Description

Machine learning is the process of making predictions and decisions from data without being explicitly programmed. Topics include a variety of supervised learning methods. Ensemble approaches are used to combine independent models efficiently. Unsupervised and semi-supervised methods demonstrate the power of learning from data without an explicit training goal.

Resources

The following resources will be useful, so please bookmark them:

- Sakai: <https://sakai.luc.edu>
- Slack: <https://comp379.slack.com>
- Box: <https://luc.box.com/comp379>

Prerequisites

Comp 271. Coursework in basic calculus and linear algebra.

Note

The Syllabus and course schedule are subject to change. Changes will be announced in advance in class and posted on Sakai.

Special Course Requirements

Please note the following special course requirements:

- This course is a programming intensive course. A large portion of your grade will be determined by your success in writing, compiling, running, and testing these programs.
- The course includes a group project.
- The course includes in-class presentations.
- The course uses Sakai to organize materials. You will generally submit your assignments using Sakai.

Textbook

Python Machine Learning by Sebastian Raschka

Course Grading

Your grade will consist of several components with relative weights as follows:

- Homework assignments: 40%
- Exams: 40%
- Project: 20%

I reserve the right to adjust the percentages in your favor if circumstances warrant.

More information about each category

Homework assignments: These assignment will involve implementing machine learning algorithms and/or writing programs to perform machine learning experiments. Some assignments may include an in-class presentation component. They will be designed to reinforce the material discussed in class.

Exams: There will be 2-4 exams based on the material presented in class. You may be asked to mathematically derive and/or describe machine learning algorithms that were discussed in class.

Project: There will be a team programming project for the course that will include periodic progress reports and a final team class presentation during one of the class sessions in the final week of the class.

Participation: Students are expected to review all lecture material *prior* to classes and attend all class sessions for the full time period. While there is no direct participation grading, in the past there has been a strong correlation between engagement and accomplishment in the course.

Grading scale

All course work will be graded numerically and your letter grade will be determined from total points earned, weighted as above. Your total points will be converted to a letter grade using approximately the following percentage ranges:

93-100 = A

90-92 = A-

87-89 = B+

82-86 = B

79-81 = B-

74-78 = C+

68-73 = C

62-67 = C-

56-61 = D+

50-55 = D

49 and lower = F

If for any reason you do miss a class session, it is your responsibility to determine what you missed, locate any handouts, determine any changes in assignments, course plans, or schedules, etc. It is not my obligation to help you make up for missing class.

I will not always cover all information from the textbook in class; additional materials may be added and additional guidance will be given. Information and activities in class and labs that are not in the book will likely appear on exams and quizzes, and will be helpful for your assignments and programming projects.

Please do not ask for personal “extra credit” to improve your grade as this is neither practical in the course nor fair to your fellow students. I reserve the right to provide extra credit assignments for the entire class if appropriate. I will be happy to discuss your performance in the course with you at any time, including discussing your possible grade based on current performance plus ways to improve your performance during the remainder of the course. In fact, I encourage you to arrange time to talk with me outside of class if you have any questions regarding the topics we have covered in the course, homework, quizzes and exams, etc.

Timely Completion

You are expected to complete all assignments, readings, and projects on time.

Personal and any team programming projects and other assignments will be due as described at the time of the assignment. See the class schedule for advanced planning.

Important: No assignments will be accepted after the due date.

Assignments are generally submitted in Sakai. Please plan ahead and be sure you complete the submission of the assignment on time. Also note that you can save assignment materials as many times as you want, but once you click Submit you may not be able to change your submission.

Important: I strongly encourage you to begin your work on homework assignments as soon as they are posted. You will not be able to complete most homework assignments in one day. This step will be key to your success in class. No sympathy given for procrastination!

You are welcome to ask questions on all assignments and course work, seek additional information on the assignments, and offer observations on the assignments to me either in or outside of class. This semester we will be using Slack (www.slack.com) for class discussion. Rather than emailing questions to me directly, I encourage you to post your questions on Slack.

Academic Honesty

Students are expected to have read the statement on academic integrity available at http://www.luc.edu/academics/catalog/undergrad/reg_academicintegrity.shtml.

This policy applies to this course. The minimum penalty for academic dishonesty is a grade of F for that assignment. Multiple instances or a single severe instance on a major exam or assignment may result in a grade of F for the course. All cases of academic dishonesty will be reported to the department office and the relevant college office and will be placed in your school record.

Academic dishonesty includes, but is not limited to, working together on assignments that are not group assignments, copying or sharing assignments or exam information with other students except in group assignments, submitting as your own information from current or former students of this course, copying information from anywhere on the web and submitting it as your own work, and submitting anything as your own work which you have not personally created for this course. If you do wish to use materials that are not your own, please check with me ahead of time and cite your source clearly. When in doubt, ask first!

Office Hours and Help

My office hours are listed at the top of this Syllabus. Additional times may be available by email appointment.