

INFO-4604, Applied Machine Learning

University of Colorado Boulder

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Information

- Public website
 - Lecture slides, readings, policies
 - <http://cmci.colorado.edu/classes/INFO-4604/>
- Piazza
 - Discussion, assignments
 - <http://piazza.com/colorado/fall2017/info4604>
- D2L
 - Grades
 - <http://learn.colorado.edu>

What is machine learning?

Murphy:

- “a set of methods that can automatically detect patterns in data, and then use the uncovered patterns to predict future data”

Essentially: learning from data

(Learning to do what? We'll see examples.)

What makes this *applied*?

Compared to other courses...

- More emphasize on using existing tools than implementing algorithms
 - But you'll do a little bit of implementation too
- Less mathematical theory
 - But you'll still learn how the algorithms work
 - Math will be taught as needed
- More focus on creating systems/pipelines (data processing, design, evaluation)

Goals

After this course, you should be able to:

- identify when machine learning can help solve a problem and which approaches are appropriate;
- be comfortable doing machine learning in Python, and be familiar enough with the algorithms and parameters to easily adopt other toolkits;
- understand the underlying concepts well enough that you can read machine learning papers, and can modify implementations for your own needs.

Background

Programming background: Python

Where to go for help?

- Ask questions on Piazza with 'python' tag
 - Asking (not just answering) questions on Piazza helps your participation grade!
- Look at examples that come with the book; experiment with editing the code so that you understand it better

Background

Math background: nothing specifically assumed

- prior exposure to discrete math, probability, and basic linear algebra would be helpful

Where to go for help?

- Ask questions on Piazza with 'concepts' tag
 - Asking (not just answering) questions on Piazza helps your participation grade!
- Review the free *OpenIntro Statistics* textbook

4604 vs 5604

Graduate students should be enrolled in 5604

5604 students will have to do additional problems on homework/quizzes/exams, and are assigned additional readings

- 4604 students can do the 5604 problems for extra credit

Attendance

I may give unannounced quizzes if low attendance becomes a problem.

If you need to miss a class, let me know **before** the lecture.

If you are affected by Hurricane Harvey, we can discuss accommodations.

Laptop Policy

I don't think we'll do anything in class that requires a laptop (but I'll let you know if there are days where it would help)

If you use a laptop in class, please be respectful of your neighbors (nothing distracting on your screen)

Homework

I will assign and grade the first programming assignment before the drop deadline (Wed, Sept 13).