Modules

This page shows the list of all the modules, which will be updated as the class progresses. There are three types of modules:

- [date]: It was covered in class, and you are responsible for the material.
- offline: It was not covered in class, but you are responsible for the material.
- optional: It was not covered in class, and you are not responsible for the material.

Date	Module	Links	Description
General			
Sep 23	Course content	html:slides,1pp,6pp pdf:1pp,6pp	What are we covering in this course?
Sep 23	AI History	html:slides,1pp,6pp pdf:1pp,6pp	Three histories of AI (logical, neural, statistical).
Sep 23	Ethics and responsibility	html:slides,1pp,6pp pdf:1pp,6pp	How should we think about the societal impacts of AI?
Prerequisites			
offline	Linear algebra	video pdf	Vectors, dot products, geometric interpretations.
offline	Vector calculus	video pdf	Taking gradients.
offline	Probability 1	video	Discrete random variables and probability distributions, mean, variance (from Khan Academy).
offline	Probability 2	video	Marginal and conditional distributions (from Khan Academy).
offline	Complexity	video pdf	Basic big-Oh notation, complexity.
offline	Optimization	video pdf	Continuous optimization, objective functions, gradient descent.
offline	Python	video code	Tutorial on using Python for this course.
Machine learning			
Sep 25	Overview	video (6:49) html:slides,1pp,6pp pdf:1pp,6pp	Overview of machine learning.
Sep 25	Linear regression	video (22:43) html:slides,1pp,6pp pdf:1pp,6pp code	Linear regression (with loss minimization and gradient descent).
Sep 25	Linear classification	video (28:01) html:slides,1pp,6pp pdf:1pp,6pp code	Linear classification (with loss minimization using hinge loss and gradient descent).
offline	Stochastic gradient descent	video (15:04) html:slides,1pp,6pp pdf:1pp,6pp code	Stochastic gradient descent.

optional	Learning demo	html:slides,1pp,6pp pdf:1pp,6pp	Interactive learning demo for supervised learning and k-means.