CAP 6610
Machine Learning
Spring 2018

https://www.kdnuggets.com/2017/12/data-science-machine-learning-main-developments-trends.html

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Instructor: Professor Paul Gader
Computer and Information Science and Engineering
Environmental Engineering Sciences
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Teaching Assistant: Mr. Yuan Zhou

Instructor Phone: 352-294-1629

Prerequisites: Math for Intelligent Systems or equivalent. Knowledge of programming in Matlab and/or Python.

Class Room: NEB 0102

Class Times: MWF 6th Period (12:50-1:40)

Instructor Office Hours: MWF 2:30-3:30, Weil Hall 575L

TA Office Hours: CSE E309, Tuesday, Wednesday afternoon 3 – 5 pm

TextBook: Machine Learning, A Probabilistic Perspective
Kevin P. Murphy
MIT Press, Fourth Printing, August 2013

MATLAB Code for Textbook: https://github.com/probml/pmtk3

Course Objectives: Learn theory behind and application of machine learning algorithms.

Overview: This course covers concepts involved in developing computer programs that learn with experience with emphasis on methods based on probability, statistics, and optimization. Specific topics include discrete and continuous Generative Models and Clustering, Bayesian and Frequentist Statistics, Regression, Classification as Regression, Model Selection, Kernels, Gaussian Process Regression, and Markov modeling. Graphical models may be included if time permits.

Grading:

Two Tests :	25% per Test
Two Projects:	25% per Project

Homework assignments will be given and solutions will be provided either online or by going over the solution in class. There will be opportunities to ask questions in class. Some problems from the homework will be used as test problems.

The projects will involve programming and performing experiments with Machine Learning algorithms. Students will work in project teams determined by the instructor. Each team will turn in their documented code, a report, and a presentation of their work. Some teams will be asked to give presentations in class.

- Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:
  https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

- Students with disabilities requesting accommodations should register with the Disability Resource Center

  Phone: 352-392-8565
  URL www.dso.ufl.edu/drc/

  by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

- The University of Florida Grading Scale is explained at
  https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

- Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at
  https://evaluations.ufl.edu

  Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at
  https://evaluations.ufl.edu/results/