

**The George Washington University
School of Engineering and Applied Science
Department of Computer Science**

Course and contact information:

Course: CSCI 4364/6364 Machine Learning

Semester: Spring 2020

Meeting time: Wednesday 6:10-8:40PM

Instructor's name: Dr. David Trott

E-mail: trottdw@gwu.edu

Bulletin course description: Machine learning algorithms: nearest-neighbor, regression, classification, perceptron, kernel methods, support vector machine (SVM), logistic regression, ensemble methods, boosting, graphical models, hidden Markov models (HMM), non-parametrics, online learning, active learning, clustering, feature selection, parameter tuning, and cross-validation. Students cannot receive credit for both CSCI 4364 taken while an undergraduate and CSCI 6364 taken while a graduate student. Students in the combined BS/MS program cannot receive credit for both CSCI 4364 and CSCI 6364. Course prerequisites: CSCI 6212 and CSCI 6362. (Fall, Every Year).

Learning outcomes: By the conclusion of this course students should be familiar with machine learning algorithms, tools, data preprocessing, machine learning workflow analysis, and execution of the machine learning pipeline.

Average amount of direct instruction or guided interaction with the instructor and average minimum amount of independent (out-of-class) learning expected per week: 2.5 hours of direct instruction and a minimum of 5 hours of independent learning, totaling a minimum of 7.5 hours per week.

Suggested textbooks:

- Grimace and Bishop's pattern recognition
- The Elements of Statistical Learning - available online
- Kevin Murphy - Machine Learning: A Probabilistic Perspective

Course schedule and organization:

- 70% Homework
- 20% Midterm Exam
- 10% Final Project

Final grade criteria will not be harsher than: 90% --> A- or better 80% --> B- or better 70% --> C- or better

University Policies:

University Policy on Religious Holidays

1. Students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance.
2. Faculty should extend to these students the courtesy of absence without penalty on such occasions, including permission to make up examinations.
3. Faculty who intend to observe a religious holiday should arrange at the beginning of the semester to reschedule missed classes or to make other provisions for their course-related activities

Support for Students Outside the Classroom: Disability Support Services (DSS) Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Rome Hall, Suite 102, to establish eligibility and to coordinate reasonable accommodations.

For additional information please refer to: gwired.gwu.edu/dss/

Mental Health Services 202-994-5300: The University's Mental Health Services offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include: crisis and emergency mental health consultations confidential assessment, counseling services (individual and small group), and referrals. counselingcenter.gwu.edu/

Academic Integrity Code: Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information. For the remainder of the code, see: studentconduct.gwu.edu/codeacademic-integrity