CS105 - Intro to Data Science
Winter 2020

Instructor Info

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Office Hours: MW 1 - 2 by appointment
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Course Overview

This course provides an overview of Data Science, covering a broad selection of key challenges in and methodologies for working with data sets. Topics to be covered include data collection/acquisition, integration, management, modeling, analysis, visualization, prediction and informed decision making, as well as data security and data privacy. This introductory course is integrative across the core disciplines of Data Science, including databases, data warehousing, statistics, data mining, data visualization, and business intelligence. Professional skills, such as communication, presentation, and storytelling with data, will be fostered. Students will acquire a working knowledge of data science through hands-on projects and case studies. Issues of ethics, leadership, and teamwork are highlighted.

Textbooks

Due to the rapidly evolving nature of the material, there is no single textbook that covers the course in its entirety. We provide some indicative textbooks below, however the class notes will also be self-contained, and pertinent references to resources will be provided throughout the course.
The following textbook covers fundamental concepts for 'dealing with data'

- Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking, 1st Edition by Foster Provost, Tom Fawcett
- Data Mining and Analysis: Fundamental Concepts and Algorithms Mohammed J. Zaki and Wagner Meira Jr
- The Wall Street Journal Guide to Information Graphics: The Dos and Dont's of Presenting Data, Facts, and Figures by Dona M. Wong

Schedule

Week 1	Logistics, Intro to DS life cycle
Week 2	Data munching and wrangling
Week 3	Intro to the data acquisition
Week 4	Data acquisition Cont.
Week 5	Data cleaning
Week 6	Intro to data visualization
Week 7	Data analysis I
Week 8	Data analysis II
Week 9	Advanced data visualization
Week 10	Big data case studies

Grade Breakdown

Your final grade will be calculated based on the following grade distribution:

- 40% - Labs (x10)
- 35% - Midterms (x2)
- 25% - Project (proposal, Jupyter notebook, presentation)

Open Door Policy

If you are struggling with a specific topic, coding issue, team issue, then please don't hesitate to ask for help or advice. I have an open door policy, so please stop by my office for help or just to chat. If my office hours conflict with your schedule, please ask to make an appointment with me.
I'd be happy to talk about career or course advising, questions about research and other opportunities, concerns about performance in class, and suggestions for improving the class, good CS-related jokes, etc. You don't need a 'reason' to stop by my office, I would like to just get to know as many of you as possible over the 10-weeks.

Academic Integrity

As your instructor, I expect you to be completely honest. Industry experience proves that many projects, and even businesses, have failed due to the dishonesty and poor ethical behavior of individuals and/or groups of individuals.
As a result, I will not tolerate any hint of dishonesty among my students. The UC Riverside ethics policy will be strictly enforced. One of the ABET outcomes involves ethical behavior. This means that you should not do anything that raises any question of violating our ethics policy. This includes, but is not limited to, the following:

- Cheating: This includes looking at others tests, attempts to communicate with others during an exam, use of unauthorized reference materials, etc.
- Plagiarism: Copying of code or assignments, or failure to acknowledge the actual sources of information in a paper. Copying another student's code also constitutes plagiarism.
- Collusion: Sharing code or assignments with another student, even temporarily.

All cases of suspected academic dishonesty will be dealt with appropriately: because of the effect on the academic community, all cases of suspected academic dishonesty will be referred to the office of academic affairs. Please read the UC Riverside policies found on this link: `https://conduct.ucr.edu/policies/academic-integrity-policies-and-procedures`.

Accommodation

If you have a disability or believe you may have a disability, you can arrange for accommodations by contacting Services for Students with Disabilities (SSD) at 951-827-4538 (voice) or specserv@ucr.edu (email). Students needing academic accommodations must first register with SSD and provide required disability-related documentation. If you already have approved accommodation(s), you are advised to notify the faculty for each course.