

ECS 189L - Topics in Applied Data Science for Computer Scientists

Fall 2020 – 4 Units, CRN: 30406

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Lecture: Tue, Thu 12:10 - 1:30 pm in Olson 6

Discussion: Mon 5:10 - 6 pm in Olson 6

This is a course on applied data science. The goal is to get the students familiar with the complex process and goals of data science. To that end we will (attempt to) cover the whole life-cycle of a data science project, by applying existing computational and statistical tools and techniques in realistic scenarios. In particular, we will be covering the following topics, time permitting: Data gathering/mining from online sources/repositories (structured and unstructured); Data storing and retrieval (databases); Data wrangling (data formatting, filtering, and cleaning); Empirical analysis (what can be shown using data and how?); Analysis methods (learning vs prediction); Artificial Intelligence for Data Science (deep learning networks and NLP); and result communication (data visualization). This course will be based on case studies drawn from real-life situations from the real estate, public health, retail, and energy domain.

Coursework: Assigned reading; 4-5 programming assignments in Python and R; final exam.

Requirements: The course is intended for CS juniors or seniors. Moderate familiarity with python and R is expected. Prior knowledge of machine learning and algorithms is recommended.

