Data Science (Applied Statistics and Mathematics)

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About Data Science

"The field of Statistics is constantly challenged by the problems that science and industry brings to its door."

"With the advent of computers and the information age, statistical problems have exploded both in size and complexity. Challenges in the areas of data storage, organization and searching have led to the new field of data mining"

"Vast amounts of data are being generated in many fields, and the statisticians job is to make sense of it all: to extract important patterns and trends, and understand what the data says. We call this learning from data."

-Trevor Hastie, Robert Tibshirani, Jerome Friedman in "The Elements of Statistical Learning"

Flow

$$P - C - A - I$$

Pose the question. Collect data. Analysis. Interpret the result.

What we will learn?

- ► Programming and Data Analysis using Python

  Basic programming, Twitter data analysis, data visualization, ...

- ► Probability and Statictics

    Simulation, Normal and Student-t dist., Bootstrap

- ► Advanced Methods in Statistical Learning

    Clustering, Classification and Regression Tree

- ► Cases

3 quizzes and 1 final test.