Welcome

Statistics 4868/6610 Data Visualization
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Introduction

Why am I interested in Data Visualization?
Why are you interested in Data Visualization?

Data Viz is very cool these days!

- data
- summarize it
- make a picture
- tell a story

Former students

- Yimeng Wang Women at the Wheel
- Jeff Hemsley somelab.net
- Aida Yazdanparast and Tony Tran Oil Spill on Birds

This course

In this course we are going to examine Data Visualization examples, methods, and software.
You will have the opportunity to work with data to create visualizations.

The book

Visualize This: The FlowingData Guide to Design, Visualization, and Statistics by Nathan Yau

The book’s website

FlowingData
See Tutorials and Projects
Websites

youtube

• Hans Rosling BBC
• Hans Rosling: The best stats you’ve ever seen
• tableau videos
• The beauty of data visualization - David McCandless

Software

What software is used for Data Visualization?

• R and R Studio
• R Studio shiny
ggobi
playwith
tableau
plot.ly
python and matplotlib and Bokeh
D3

Software

• MS Excel
• JMP
• SAS
• Minitab
• SPSS

and many many more …

blog post Top Data Visualization Software Products

History

• Exploratory Data Analysis (EDA)
• Exploratory Data Analysis by John Tukey

Other books

• The Grammar of Graphics by Leland Wilkinson
ggplot2 by Hadley Wickham
• Graphics of Large Datasets, Visualizing a Million by Unwin, Theus, Hofmann
The cloud

Do you know what The Cloud is?
Why is it so important for data visualization?

Simple R example

```r
summary(cars)
```

```
speed       dist
Min. : 4.0  Min. : 2.00
1st Qu.:12.0 1st Qu.: 26.00
Median :15.0 Median : 36.00
Mean  :15.4  Mean  : 42.98
3rd Qu.:19.0 3rd Qu.: 56.00
Max.  :25.0  Max.  :120.00
```

Simple R example

```r
plot(cars)
```