The Erdős Institute

Data Visualization Mini Course

Welcome and Orientation

Welcome!

- Welcome to the Data Visualization Mini Course!
- In this course we will:
  - Learn technical skills
  - Discuss data visualization best practices
  - Have fun!

Instructor

- Matthew Osborne, PhD
  - Head of Boot Camps at the Erdős Institute
- Graduated from OSU Math in 2020
- Likes:
  - My cats
  - Reading
  - Going for walks
  - Baked goods

Course Website

https://www.erdosinstitute.org/programs/spring-2023/data-visualization

- Can find everything you need there

Office Hours

- Wednesdays 4:00 - 5:00 PM ET
- Fridays 11:00 AM - 12:00 PM ET
- Zoom link can be found on course web page

Prerequisites

- You **must** have a basic understanding of Python including how to install new packages
  - Check out out python prep materials if needed, https://www.erdosinstitute.org/programs/asynchronous/python-prep
- Understanding of basic statistics and probability is helpful, but not needed
  - Probability Theory Review: https://docs.google.com/presentation/d/1BPdJqdOrtxoBkBnP1iqzZtw0tPRkmRZdcgZm0oiTc9s/edit?usp=sharing
  - Basic Statistics Review: https://docs.google.com/presentation/d/1IOOEeCWw3c19dHhGAxHH0FqEajxId_hK3Qb9e6rQ1Hs/edit?usp=sharing

What we will cover

- Python
  - matplotlib
  - seaborn
  - bokeh
  - plotly
- Web-based visualization
  - HTML
  - CSS
  - SVG
  - Some JavaScript
  - d3.js
- Basic Tableau

Mini course format

- Eight weeks long
  - Six week of lectures and activities
  - Two weeks to work on final project
- Asynchronous lectures
  - Hosted on Erdős Institute website
  - Files needed for lectures found at the github repository, https://github.com/TheErdosInstitute/data-viz
    - Contact Olivia Haimerl, our community organizer, for access
- Three problem sets
  - One every two weeks
- Final Project due at the end of eight weeks

Asynchronous lectures (more info)

- Video schedule can be found in Schedule.pdf on the course webpage, https://www.erdosinstitute.org/programs/spring-2023/data-visualization
- Each video has corresponding files in the the *lectures* repository
  - Python: jupyter notebooks
  - Web Browser Based: PDFs and HTML files
  - Tableau: TBA

Problem Sets (more info)

- Found in *problem_sets* folder of repository
- Each problem set has its own folder
- Read *problem_set_i.pdf* file for problems
- Also on your own or in small self-organized groups
- Live Zoom sessions for those looking to work with others on problem sets:
  - Wednesdays 5:00 - 6:00 PM ET
  - Access Zoom via your Erdős profile or the course webpage
  - Optional

Final project (more info)

- Must complete a final project to receive a certificate of completion
- Projects can take a variety of forms including:
  - An interactive dashboard
  - A data essay
  - A larger data visualization poster
  - A series of visualizations used as a part of your academic study
  - And more
- You may work by yourself or in small groups

Mini course order

- We will start with python
- Then web-based visualizations
- End with Tableau

Questions?