CSSS 569 Visualizing Data and Models
Lab 1: Intro to labs and R Markdown

Ramses Llobet

Department of Political Science, UW

January 6, 2022
Let’s talk about me

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- 9 months of experience as a data scientist in the mathematics department from the University of Essex, UK.
- This is my first time instructing a methods course.
The current version of the lab materials is adapted from those drafted by our two previous TAs for this course, Brian Leung and Kenya Amano.
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I plan to complement and extend some of the lectures (I am open to input).
Logistics

Lab sections:

- Section AA: Fridays, 10:30 - 11:30 pm
- Section AB: Fridays, 3:30 - 4:30 pm

Office hours:
- After the labs: 11:30 to 12:20 pm and 4:30 to 5:20 pm.
- By appointment.

Lab materials will be available at Chris's course website.

Use Slack channel.
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Homework Submission

▶ Submit a *PDF* file to submit in Canvas.
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- File name with three elements:
  
  \[
  (\text{CSSS569})(\text{HWN}^{\circ})(\text{NameSurname})
  \]
Submit a *PDF* file to submit in Canvas.

File name with three elements:

(CSSS569)(HWNº)(NameSurname)

e.g.: CSSS569HW1RamsesLlobet (no space)
My approaches to labs

1. Intelligibility

   - Clean graphs: let the data, rather than designs, speak.
   - Tidy code: program in a way that you can read the code out loud and explain it to others.

2. Applicability

   - Add new techniques, tricks or tools to your toolkit every week.
   - Start thinking about some projects: rework your old graphs, prepare for a poster presentation, a thesis, etc.

   Problem Sets 2 and 3 will allow you to explore your own research.

3. Code-oriented labs

   - The main goal of the labs is to provide you with code for your own applications.
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## Labs schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Setting the Stage</strong></td>
</tr>
<tr>
<td>1</td>
<td>Intro to R Markdown</td>
</tr>
<tr>
<td>2</td>
<td>Intro to (\LaTeX) with Overleaf</td>
</tr>
</tbody>
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### Graphic Tools in R

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Intro to Base R Graphics and ggplot2</td>
</tr>
<tr>
<td>4</td>
<td>Advanced ggplot2 and Extensions</td>
</tr>
<tr>
<td>5</td>
<td>Intro to tile</td>
</tr>
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### Selected Topics (Open to Input)

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<tbody>
<tr>
<td>6</td>
<td>Visualizing Spatial Data</td>
</tr>
<tr>
<td>7</td>
<td>Visualizing Network Data</td>
</tr>
<tr>
<td>8</td>
<td>Interactive Visual Display with R Shiny</td>
</tr>
<tr>
<td>9</td>
<td>T.B.D.</td>
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- \LaTeX{} is supported; more next week.
To compile an R Markdown document to PDF, you need to install \LaTeX

- If you haven’t installed any previous \LaTeX distribution, I recommend TinyTeX
- “TinyTeX is a lightweight, portable, cross-platform, and easy-to-maintain \LaTeX distribution”

```r
install.packages('tinytex')
tinytex::install_tinytex()
```

Let’s demonstrate