Coding Bootcamp

Social Media and Web Analytics

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Learning Goals for this Week

- Familiarise yourself with the coding tools we use in the course
- Increase confidence in your coding abilities
- Acquire skills to conduct reproducible data analysis

How: DataCamp

- Won't need to have tools installed to start learning
- Exercise based learning

What You Will Learn

1. Introduction to Command Line Programming
2. Version Control with Git and GitHub
3. Introduction to R and the `tidyverse`
4. Introduction to R Markdown

There's quite a bit to work through...

$\Longrightarrow$ *don't* leave this to the last minute

... even if you're comfortable with most of the tools

Why this is Important

- Starting point for the analysis in this class
  - We want everyone to start from the same blocks
- Skills will generalise to all analytics tasks
  - In your degree
  - And in your future careers
  - ... tools we teach are tools that industry uses

Command Line Programming

- Move away from 'point and click' to typed instructions
- Your main focus:
  - Navigating your file system
  - Creating, moving, copying files
  - Looking at contents of a file

Version Control with Git and GitHub

- Manage changes made to files systematically
- Git: records changes made to files
    - Can rewind
    - No 'conflicted copy' errors
    - Easy to collaborate
- GitHub: a place to store version controlled projects (online)
    - A central hub
    - Facilitates collaboration within teams
- Your main focus:
    - How to make and track changes, reverse them
    - How to share these changes online with collaborators
    - Solve conflicts between different version histories

Introduction to R and the tidyverse

- `R`: a program for statistical / data - intensive analysis
  - `R` plus its package ecosystem contains everything we need for this course: network analysis, text analysis and econometrics
  - ... and a *lot* more
- `tidyverse`: opinionated collection of R packages for data Science
  - Similar design philosophy, grammar and data structures $\implies$ consistent syntax
- Your main focus:
  - Loading data from a file
  - Data manipulation using `dplyr` and `tidyr`
  - Plotting with `ggplot2`

Introduction to R Markdown

- R Markdown: a file format to integrate code, results and written reports
- Your main focus:
  - How to create an R Markdown document
  - How to add analyses and plots produced with R to a written document
  - How to organise a report

After DataCamp

How can I put everything I have learned together?

- Work through: "How to Use Git/GitHub with R"
  - Walk through an example workflow
  - Write some `R` code, commit changes with Git, undo some progress with Git

After DataCamp

How can I put everything I have learned together?

- Git in in this class:
  - Cloning weekly Lab Assignments & making changes to your solution
  - Accepting and Submitting Assignments
- `R` in this class:
  - All coding based components of this class build off `tidyverse` tool kit and principles

License & Citation

Suggested Citation:

```
@misc{smwa2022,
      title={"Social Media and Web Analytics: Coding Bootcamp"},
      author={Lachlan Deer},
      year={2022},
      url = "https://github.com/tisem-digital-marketing/smwa-codecamp"
}
```

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