# Methods for Computational Social Science

## Spring 2025

European University Institute
The Badia, Seminar Room 2, 14:00 - 18:00

## Instructors

Professor: Kevin Munger
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Current version (subject to change!): June 5, 2025

## Course Overview

This is a methods workshop taking place over 5 days. We can't cover anything in detail; the idea is instead to expose you to a wide variety of methods being used in the emerging space of "Computational Social Science."

To remain at the cutting edge, I'll be including lectures from colleagues with expertise in specific topics of interest. Each class will include both a lecture component and a "lab component," where we will work through some coding examples together in class.

## Schedule

### June 5: Philosophy of CSS, the internet

This is a *very* compressed course. We will devote most of the first day to a theoretical orientation to the course philosophy; this will require everyone to have done the readings in advance and be prepared to discuss.

- What is "computational social science"?
- Philosophy of science
- Relationship to other methods
- Readings:

  - [3]
  - [2]
  - [1]
- Guest Lecture: Alexandra Jabbour, Pre-Registration and Registered Reports

### June 9: Machine Learning

- Basics
- Training/test
- Cross-validation
- Guest lecture: Drew Dimmery, Machine Learning in Theory and Practice

### June 10: Modern Text Analysis

- Transforming a document into text data
- Feature selection and representation
- What can LLMs do? What can't they do?
- Guest lecture: Jim Bisbee

### June 11: The Internet, Experiments

- Settting the academic agenda for studying the interent
- Digital media & media effects
- Sampling and generalization
- Guest lecture: Chris Lucas, Multimodal Data

### June 12: Other topics

- Generation of visual stimuli
- Visual conjoints
- Brainstorming for the future
- Guest lecture: Michelle Torres, Image as Data

## References


[1] Abdullah Almaatouq, Thomas L Griffiths, Jordan W Suchow, Mark E Whiting, James Evans, and Duncan J Watts. Beyond playing 20 questions with nature: Integrative experiment design in the social and behavioral sciences. *Behavioral and Brain Sciences*, 47:e33, 2024.

[2] Jake M Hofman, Duncan J Watts, Susan Athey, Filiz Garip, Thomas L Griffiths, Jon Kleinberg, Helen Margetts, Sendhil Mullainathan, Matthew J Salganik, Simine Vazire, et al. Integrating explanation and prediction in computational social science. *Nature*, 595(7866):181–188, 2021.

[3] Kevin Munger. Temporal validity as meta-science. *Research & Politics*, 10(3):20531680231187271, 2023.