

Masterclass in Social Research

Computational Thinking and Social Science



“A new kind of social science” with computational thinking

- ▶ Computational thinking requires the integration of **social science** and **technological** imagination
- ▶ Computational social science can involve one or more different **tasks**
- ▶ The use of computational tools and thinking will help us improve the **speed** and **scale** of our research



“A new kind of social science” with computational thinking

- ▶ Computational thinking requires the integration of **social science** and **technological** imagination
 - Social science imagination: Ability to think about social phenomena using existing concepts and theories while identifying the interplay between individuals and structures
 - Technological imagination: Ability to think and develop technologies to better serve research objectives
- ▶ Computational social science can involve one or more different **tasks**
- ▶ The use of computational tools and thinking will help us improve the **speed** and **scale** of our research



“A new kind of social science” with computational thinking

- ▶ Computational thinking requires the integration of **social science** and **technological** imagination
- ▶ Computational social science can involve one or more different **tasks**
 - Use novel data sources (e.g., big data and digital trace data)
 - Use new computationally heavyweight analysis methods
 - Build models to explain social patterns
 - Identify and address new problems
 - Improve social science theory
- ▶ The use of computational tools and thinking will help us improve the **speed** and **scale** of our research



“A new kind of social science” with computational thinking

- ▶ Computational thinking requires the integration of **social science** and **technological** imagination
- ▶ Computational social science can mean different things
- ▶ The use of computational tools and thinking will help us improve the **speed** and **scale** of our research
 - Skills to command and speak with computer
 - Skills to ask interesting and important questions
 - Skills to understand the possibilities computers provide for scholars



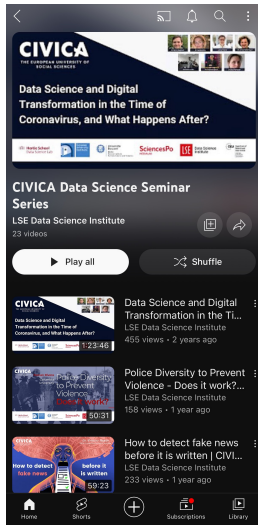
Thinking outside the box



<https://youtu.be/io6QdGcoWMU>



CIVICA Data Science seminar series



https://youtube.com/playlist?list=PLj2A-_5PZ13KELSBSEVLxPcPQbOao5eSt

"The CIVICA Data Science seminar series is the **interdisciplinary** forum of the CIVICA European University of Social Sciences, and alliance of eight leading higher education and research institutions. We foster a community of researchers, practitioners, and policy makers working to address complex societal challenges through the use of **novel** methodological and **data-driven** approaches, drawing from machine learning and quantitative methods from biology, **sociology**, **political sciences**, **economics**, and physics among others disciplines."





**Università
Bocconi**
BIDSA
Bocconi Institute
for Data Science and Analytics

SciencesPo
MÉDIALAB



Exercise: Relating your research to “computers”

► Stage 1: What a computational social science project looks like

- Visit "CIVICA Data Science Seminar" – find a previous talk related to your subject area and/or broader research interests and read the abstract.
- Visit "UK Data Services" – find the method(s) mentioned in the talk/abstract and read the synopsis to get the intuition.

► Stage 2: Think through the following questions

- Why do you choose this talk? What is this talk about? What data and methods were used in the project?
- Can your research benefit from incorporating any computational elements, in terms of data and/or the methods?
- Can you come up with a research idea using similar methods and/or data?
- How can we create an "inclusive" computational social science research environment?





CIVICA Data Science Seminars



UK Data Services



Next week: Using AI for/in your research

- ▶ We will discuss the challenges and opportunities brought by **ChatGPT** (<https://openai.com/blog/chatgpt>).
- ▶ We will practice how you can use ChatGPT to help with your research (and the caveats).

