Universität Bremen
Information Management Group (AGIM)
CRC 1342: Global Dynamics of Social Policy

WelfareComp:
Computational Social Science and Critical Data Studies to better understand social welfare systems

Master Project presentation

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Who are we?

Prof. Dr. Andreas Breiter
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Head of Information Management Group

Gabriela Molina
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PhD Candidate
Data visualization

Paola Lopez
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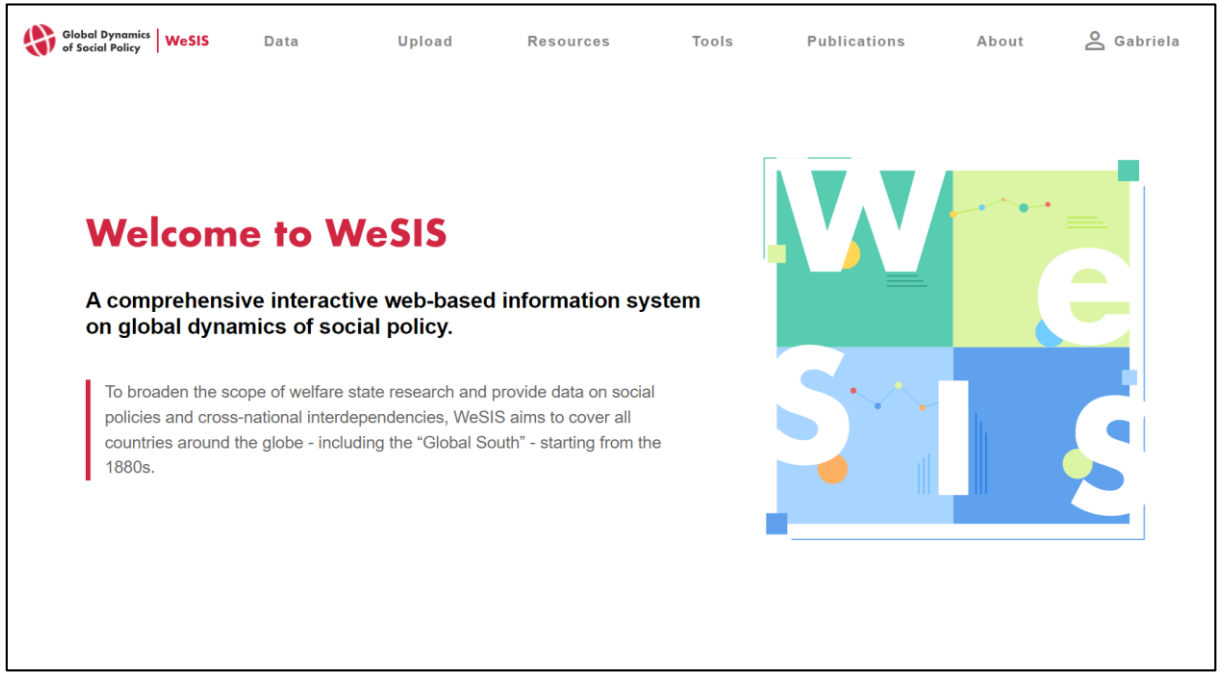
PhD Candidate
Interdisciplinary Legal Studies

Our Research Partner
CRC 1342: Global Dynamics of Social Policy

- → CRC: 12-year Collaborative Research Center
- → Our partner: SOCIUM (Research Center on Inequality and Social Policy)
- → Collaboration of computer scientists with political scientists, sociologists and geographers
- → Goal: Analyze the global dynamics of public social policy and the welfare state



Our Research Partner

CRC 1342: Global Dynamics of Social Policy

A02. Global Dynamics of Coverage and Generosity in Work-Injury Compensation, Unemployment and Old-Age Pensions
Project directors: Simone Scherger, Sebastian Fehrler, Nate Breznau

A03. Worlds of Labour: Coverage and Generosity of Employment Law
Project directors: Irene Dingeldey, Ulrich Mückenberger

A04. Global Developments in Health Care Systems
Project directors: Heinz Rothgang, Lorraine Frisina Doetter, Sebastian Haunss

A05. The Global Development of Coverage and Generosity in Public Education
Project directors: Kerstin Martens, Michael Windzio

A06. Pathways to Family Policy Universalism: Coverage and Generosity of Family Policies in a Global Perspective
Project director: Sonja Drobnič

A07. Global Dynamics of Long-Term Care Policies
Project directors: Simone Leiber, Heinz Rothgang

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regional “deep dives” (qualitatively)

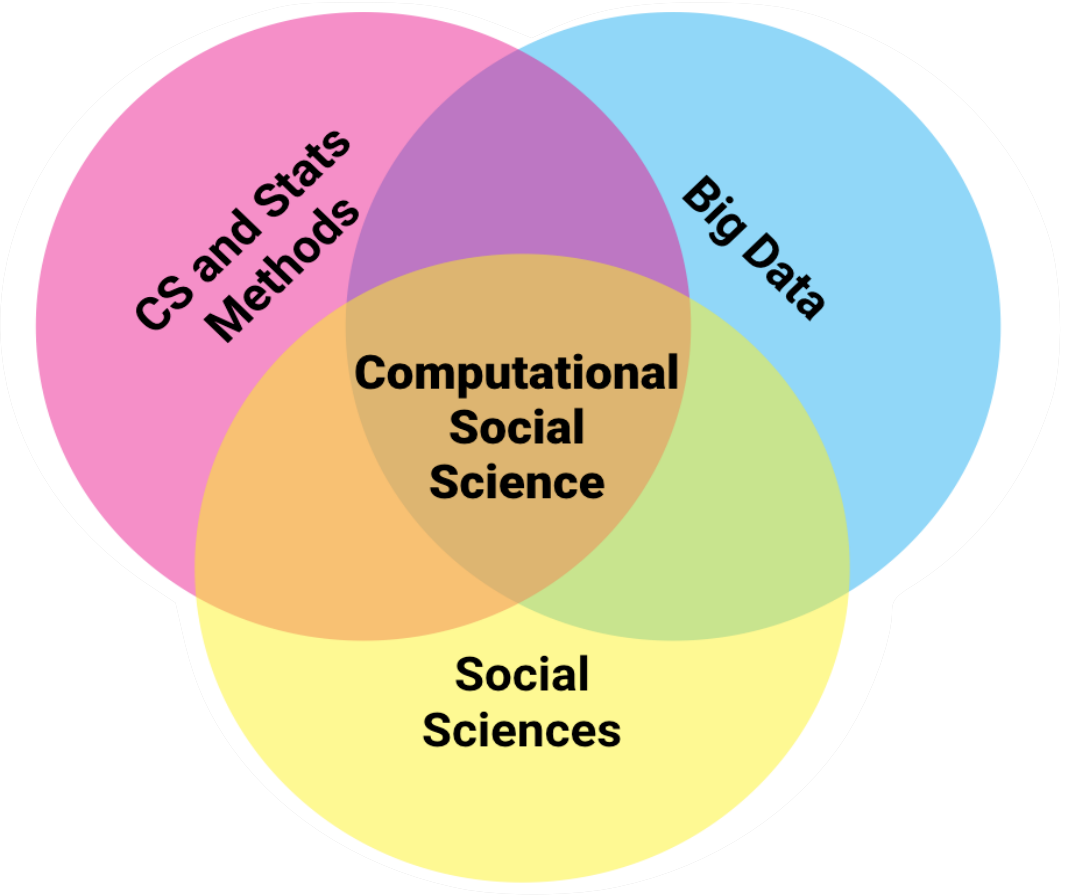
Computational Social Science

Goal

To understand the questions and methods of social scientists and explore how they can benefit from computational methods

Methods

Learn how to formulate CSS research questions, apply CSS methods to solve real-world problems, design and develop visualization and NLP tools



Computational Methods

Welfare State Research

TOPIC	METHODS
Automated analysis of national legal texts with regard to the naming of benefit components.	Natural Language Processing
Web tool for the interactive creation of the "Cultural Spheres" index	Interactive Information Visualization
Scraping of news portals and online presences of newspapers as well as the websites of ministries and forums	Web Scraping, Natural Language Processing, automatic text analysis and summarization
Systematic analysis of media coverage of social protests and internally displace persons	Machine translation (Ukrainian, Georgian, Aseri), automatic text analysis, social network analysis
Automated download of CIA websites and country reports and automatic keyword search; geocoding of historical maps of military bases	Web Scraping, automatic text analysis
Identification of special aspects in government health reports in the Mercosur area	Machine translation (Spanish and Portuguese), automatic text summarization
Development and analysis of a multilingual text corpus to identify socio-political positions and claims in party program	Machine Translation (Chinese), Natural Language Processing, claim detection, automatic text analysis

Critical Data Studies

Questions

- Can everything be captured by data?
- What can be quantified – and what cannot?
- What is "lost in translation"?
- How do we engage productively with the limitations of data?
- Is big(ger) data always better data?

Perspectives

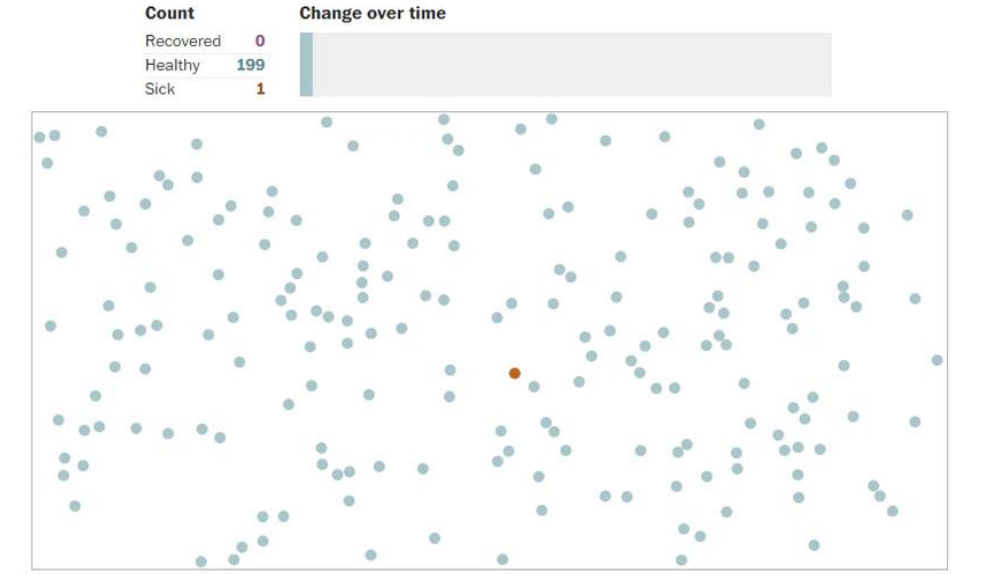
- Data is not given – it is produced by humans.
- Interdisciplinary perspectives and concepts

Data visualization

The COVID-19 pandemic has shown the relevance of data visualization for exploring and explaining data relevant for the general public.

In this project:

→ Design of interactive visualizations
→ Tool development for visual exploration
→ Conducting experiments



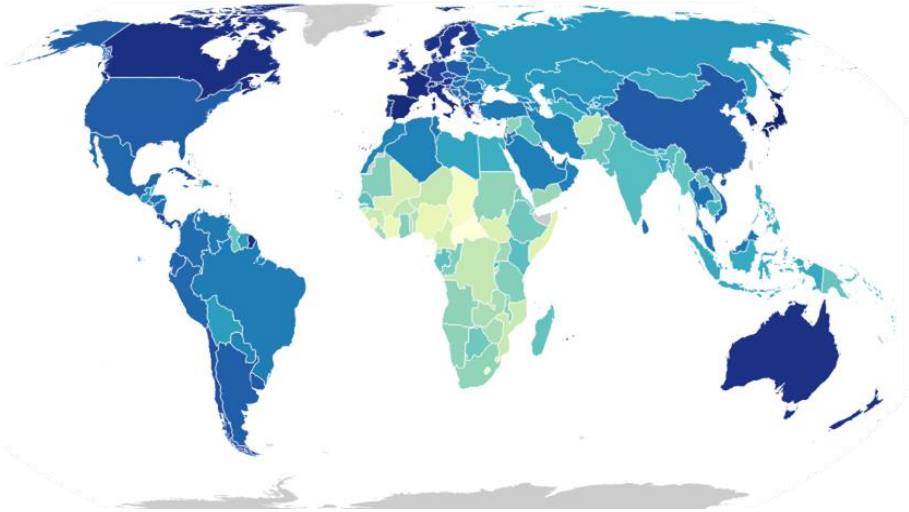
"Why outbreaks like coronavirus spread exponentially, and how to "flatten the curve" by Harry Stevens (2020)

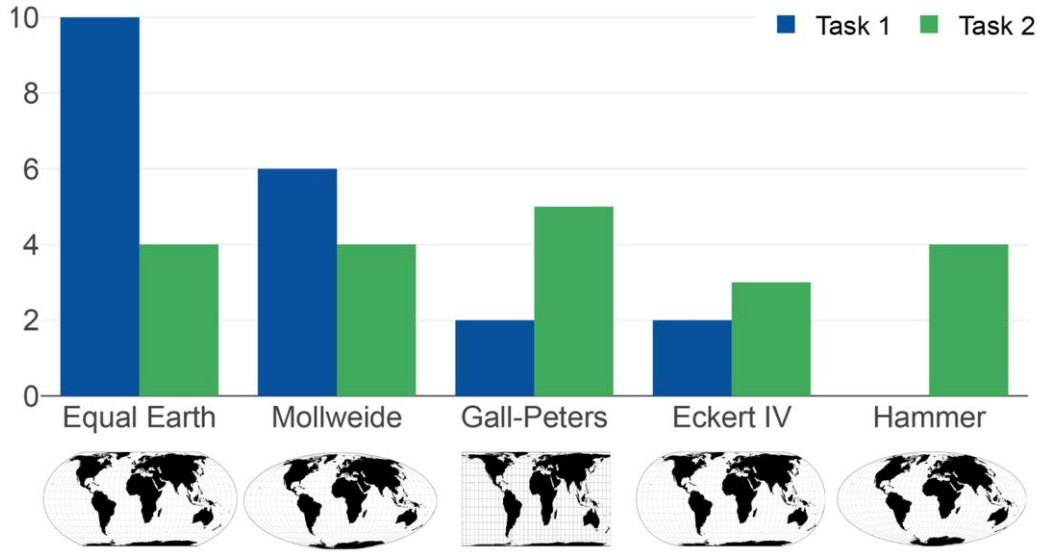
Mapping the Global South: Equal-Area Projections for Choropleth Maps

Published at IEEE VIS 2020

Research Questions

1. How do domain tasks influence the design choices for choropleth maps?
2. What equal-area projection is preferred for world choropleth maps?





The initial plan …

→ Take the prep course and get the basic skill set
→ Form a project management and prepare the project initialization (Sep 24)
→ Search for partner projects and do the literature review (Oct/Nov 24)
→ Set up the project‘s management (including rules and tools) (Oct 24)
→ Come up with a research topic and objectives for the project (Nov 24)
→ …

How is a project with us?

Research-based learning

→Project management is self-organized (and you will learn a lot)
→Team-oriented
→Tackling current real-life topics
→Application-oriented (you will have access to real-world users!)
→User-centric
→Technical skills required (NLP, InfoViz, data handling)
→Options for research publications at conferences

Prep course: Data Science and Visualization (by Gabriela Molina León)