Summer Institute for Computational Social Science

Bamberg Graduate School of Social Sciences



Programme Booklet

28 July - 09 August 2019 BAMBERG

SICSS BAMBERG

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Welcome to SICSS Bamberg 2019

A very warm welcome to you! We are excited to host the first SICSS Event in Bamberg and wish you a productive and enjoyable stay! Throughout the summer institute, you will be able to meet and get in touch with interesting new and already well-known people.

Our programme includes lectures and group problem sets in the first week, followed by participant guided research projects in the second week. You will be able to work in teams to learn how to apply the material from the lectures. Topics covered include ethics, web scraping and digital trace data collection, automated text analysis, network analysis, digital field experiments and surveys in the digital age. There will be ample opportunity for students to discuss their ideas and research with the organizers, other participants and guest speakers. One of our goals is to build and expand the **Computational Social Scientists Network** among our participants in Germany and abroad.

Otto-Friedrich University is a mediumsized University with a sharp profile in social and economic science, as well as human sciences, complemented by application oriented computer science. Interdisciplinary research activity and a variety of combinable courses of study contribute to the scientific landscape of Germany. Research and teaching constitute one entity for the University. Service facilities and administration support innovation and efficiency. Research strength manifests both in outstanding individual projects and in larger research alliances. The university is committed to quality in teaching and sees its good rankings as an incentive on this path.

We hope that within the framework of the SICSS you will not only be able to expand your knowledge, but also get to know Bamberg as a great vacation spot. We warmly invite you to take advantage of the cultural offer of the city of Bamberg.

Outside the university life, Bamberg is steeped in history, which is one reason why it was declared a World Heritage Site in 1993. A special feature of Bamberg's urban design is the way in which the present town illustrates the link between agriculture (market gardens and vineyards) and the municipal distribution center. Known philosophers and writers such as Hegel and E.T.A. Hoffmann lived and worked here. Today, the city is particularly popular for its many breweries and the wonderful view of the Regnitz and the area known as "Little Venice".

We are very much looking forward to working with you and wish all participants a great and productive time.

Thomas Saalfeld, Julian Hohner and Carsten Schwemmer

Organizer

About the Organizers



Carsten Schwemmer

Carsten Schwemmer is currently finishing a PhD in Sociology at Bamberg University, Germany. His research focuses on computational methods for the study of ethnic minorities and social media communication. Carsten is particularly interested in natural language processing, data mining and software development. He taught courses on computational social science at University of Bamberg, University of Constance and Humboldt University of Berlin.



Julian Hohner

Julian Hohner currently strives to start a PhD in Political Science at Bamberg University. He is also part of the Management of the Bamberg Graduate School of Social Sciences and is particularly interested in machine learning, quantitative text analysis, inferential statistics as well as populist, party and governmental behaviour studies. Moreover, Julian is participating as Teaching Assistant in the ECPR Winter/Summer Schools on a regular basis.



Thomas Saalfeld

Thomas Saalfeld is Professor of Political Science at the University of Bamberg and Director of the Bamberg Graduate School of Social Sciences. Prior to joining Bamberg in 2009, he held research and teaching positions at the Universities of the German Federal Armed Forces Munich, Dresden, Kent and Bamberg. He was a Member of the Council of the German Political Science Association from 2015 to 2016 and joined the Executive Committee of the European Consortium for Political Research (ECPR) in 2018. Since 2015, he has been the local organizer of the ECPR Winter School in Methods and Techniques. He has a particular interest in text-as-data applied to legislative studies.

Comprehensive Time Schedule

Week 1

Sunday, 28 July: Opening Dinner 19.00 at BAGSS

Monday, 29 July: Introduction to Ethics

Guest Speaker: Dr. Andreas Jungherr

Tuesday, 30 July: Collecting Digital Trace Data

Wednesday, 31 July: Social Network Analysis

Guest Lecturer: Dr. Oliver Posegga

Guest Speaker: Dr. Faribi Karimi

Thursday, 01 August: Automated Text Analysis

Friday, 02 August: Surveys in the Digital Age

Guest Speaker: Dr. Ridhi Kashyap

Saturday, 03 August: Experiments

Sunday, 04 August: Day Off!

Comprehensive Time Schedule

Week 2

Monday, 05 August: Work on Group Projects

Guest Lecture: Dr. Martijn Schoonvelde

Tuesday, 06 August: Work on Group Projects

Guest Lecture: Dr. Milena Tsvetkova

Wednesday, 07 August: Work on Group Projects

Thursday, 08 August: Presenting Group Projects

Closing Dinner

Friday, 09 August: Participants' Departure

About the Speakers

About the Speakers

Milena Tsvetkova



Milena Tsvetkova is Assistant Professor at the Department of Methodology at the London School of Economics and Political Science. Prior to that, she was a Postdoctoral Researcher in Computational Social Science at the Oxford Internet Institute at the University of Oxford. She holds a PhD in Sociology from Cornell University, where she worked with Michael Macy. Her interests reside in the field of computational social science. In her research, she uses large-scale web-based social interaction experiments, network analysis of online data, and agent-based modeling to investigate fundamental social phenomena such as cooperation, social contagion, segregation and inequality.

Andreas Jungherr



Andreas Jungherr is a Juniorprofessor (Assistant Professor) for Social Science Data Collection and Analysis at the University of Konstanz. He studies the impact of digital media on politics and society. He has worked on the uses of digital media and technology by publics, political actors, and organizations in international comparison. He also addresses challenges for scientific research in reaction to digital change in order to realize opportunities emerging from new data sources and analytical approaches. In this, he has focused on harnessing the potential of digital methods and computational social science while addressing methodological challenges in its integration into the social sciences. Depending on the object under study, he also uses traditional quantitative and qualitative empirical approaches. Currently, he is lead investigator of 'Communicative Power in Hybrid Media Systems', a project financed by the Volkswagen Stiftung (2017-2020). The interdisciplinary project, featuring computer and information scientists, focuses on the interconnection between political coverage in legacy, online media and political talk on online platforms in Germany, UK, USA, and South Korea.

About the Speakers

About the Speakers

Oliver Posegga



Oliver Posegga is an Assistant Professor at the Department of Information Systems and Social Networks at the University of Bamberg, an affiliate of the Center for Collective Intelligence at the MIT Sloan School of Management and a principal investigator of the project 'Communicative Power in Hybrid Media Systems', funded by the Volkswagen Foundation. His research focuses on understanding the collective dynamics of digitally enabled networks, such as collective behavior and intelligence in organizational and societal settings, and touches a variety of topics, such as the dynamics of social networks, crisis management, crowdsourcing, data- and information quality, and discursive power in contemporary media systems.

Ridhi Kashyap

Ridhi Kashyap is Associate Professor of Social Demography and fellow of Nuffield College at the University of Oxford. She completed her DPhil in Sociology jointly affiliated with the University of Oxford and Max Planck Institute for Demographic Research. Her research spans a number of substantive areas in demography and sociology, including gender, mortality and health, the diversification of family forms, ethnicity and migration. Her work has sought to adopt computational innovations both in terms of modelling approaches, such as agent-based models and digital trace data from web and social media platforms to study social and demographic processes. She is currently leading a Data2X and UN Foundation supported project that uses big data from the web, in particular largescale online advertising data that provide information on the aggregate numbers of users of online platforms by demographic characteristics, to measure sustainable development and gender inequality indicators.



About the Speakers

About the Speakers

Fariba Karimi

analysis.



Fariba Karimi is a researcher at the Department of Computational Social Science at GESIS – Leibniz Institute for the Social Sciences. She received her PhD in Physics with specialization in network science. Her current research focuses on computational approaches for addressing societal challenges such as gender inequality, bias in algorithms and sampling hard-to-reach groups and minorities. Her main expertise is analyzing large-scale socio-technical systems using network theory and data

Martijn Schoonvelde

Martijn Schoonvelde is an Assistant Professor in Political Science at University College Dublin. Prior to that, he was a Postdoctoral Fellow at the Vrije Universiteit Amsterdam s well as the University of Exeter and a Max Weber Fellow at the European University Institute in Florence. In his work, he analyzes the rhetoric of politicians. Is this rhetoric driven by strategy, ideology or aspects of their personality? Do they shift blame to others when topics are sensitive with the public? And when do they use emotional appeals? More broadly, his interests include political communication, EU politics, computational social science and text as data.



Hosting SICSS

Want to host your own SICSS Event?



You can host a partner location of the Summer Institutes of Computational Social Science (SICSS) at your university, company, NGO, or government agency. For universities, SICSS provides an exciting approach to training and building interdisciplinary community. For companies, NGOs, and government agencies, hosting a parter location enables building connections with the academic community, providing training for current employees, and recruiting future employees.

Starting in 2018, the Summer Institutes in Computational Social Science (SICSS) began including partner locations in order to increase the number of participants. The Summer Institute is two weeks long and parter locations typically involve: 1) live-streamed lectures on topics ranging from automated text analysis to ethics; 2) training exercises to reinforce key ideas from lectures; 3) live-streamed research talks from leaders in the field and 4) participantled group research projects. This model has been used successfully at universities and companies around the world.

The Summer Institutes are highly modular and the open source curriculum can be adapted to the skills and interests at each location. The minimum budget to support a partner location is about \$10,000 to \$20,000 and depends on local conditions. If you have more questions about budgeting—or grants that many be available to support partner locations—please contact us at rsfcompsocsci[at] gmail[dot]com.

In order to ensure quality and consistency, all parter locations must have a former participant of SICSS as one of the local organizers. If you don't have any SICSS alumni at your organization, you can contact us about finding a former participant that could collaborate with you.

Introduction to Ethics - Monday 29.07

9.00 - 9.15 Logistics

9.15 - 9.30 Introductions

9.30 - 10.00 Introduction to computational social science

10.00 - 10.30 Why SICSS?

10.30 - 10.45 Coffee Break

10.45 - 11.30 Ethics: Principlesbased approach

11.30 - 12.15 Four areas of difficulty: informed consent, informational risk, privacy, and making decisions in the face of uncertainty

12.15 - 12.30 Introduction to the group exercise

12.30 - 1.30 Lunch

1.30 - 3.45 Group exercise

3.45 - 4.00 Break

4.00 - 5.30 Guest speaker:

Andreas Jungherr

Normalizing Digital Trace Data: Why we must break with supposed exceptionalism in the work with digital trace data

Social scientists have found themselves confronting a massive increase in available data sources. In the debates on how to use these new data, the research potential of "digital trace data" has featured prominently.

While various commentators expect digital trace data to create a "measurement revolution", empirical work has fallen somewhat short of these grand expectations. In fact, empirical research based on digital trace data is largely limited by the prevalence of two central fallacies: First, the n=all fallacy; second, the mirror fallacy. These fallacies can be addressed by developing a measurement theory for the use of digital trace data.

Collecting Digital Trace Data - Tuesday 30.07

9.00 - 9.15 Logistics

9.15 - 9.30 What is digital trace data?

9.30 - 9.45 Strengths and weakness of digital trace data

9.45 - 10.30 Screen-Scraping

10.30 - 10.45 Coffee Break

10.45 - 11.45 Application Programming Interfaces

11.45 - 12.30 Building Apps and Bots for Social Science Research

12.30 - 1.30 Lunch

1.30 - 3.45 Group Exercise

3.45 - 4.00 Break

08.00 - 12.00 Office and Consultation Hour: Andreas Jungherr

Contact the Speaker or the Orgaanizer for a specific time frame.

4.00 - 5.30 Guest speaker: Video from SICSS Princeton

Social Network Analysis - Wednesday 31.07

9.00 - 9.15 Logistics

9.15 - 9.30 Network Analysis: Then and Now

9.30 - 10.00 The Fundamentals of Network Analysis

10.30 - 10.45 Plotting Networks

10.30 - 10.45 Coffee Break

10.45 - 11.45 Node and Network Level Meassures

11.45 - 12.30 Exploring Network Properties

12.30 - 1.30 Lunch

1.30 - 3.45 Group Exercise

3.45 - 4.00 Break

01.00 - 04.00: Office and Consultation Hour: Oliver Posegga

Contact the Speaker or the Organizer for a specific time frame.

4.00 - 5.30 Guest speaker:

Fariba Karimi

Application of Network Analysis on Addressing Societal Challenges

Social network analysis (SNA) allow us to study associations between individuals, groups, and organizations and gain insights on how macro-level phenomena such as information diffusion, emergence of inequality and biases emerge as a result of micro-level interactions.

lecture. fundamental In this components of SNA, such as mechanisms, edge formation centrality measures, sampling techniques, community detection and information propagation will be introduced. Furthermore, there will be a present application of SNA on addressing social science questions.

Automated Text Analysis - Thursday 01.08

9.00 - 9.15 Logistics

9.15 - 9.30 History of quantitative text analysis

9.30 - 10.00 Basic Text Analysis/ GREP

10.00 - 10.30 Dictionary-Based Text Analysis

10.30 - 10.45 Coffee Break

10.45 - 11.30 Supervised models

11.30 - 12.30 Topic models/ Structural Topic Models

12.30 - 1.30 Lunch

1.30 - 3.45 Group Exercise

3.45 - 4.00 Break

9.00 - 12.00: Office and Consultation Hour: Fariba Karimi

Contact the Speaker or the Organizer for a specific time frame.

4.00 - 5.30 Guest speaker: Video from SICSS Princeton

Surveys in the Digital Age - Friday 02.08

9.00 - 9.15 Logistics

9.15 - 9.45 Survey research in the digital age

9.45 - 10.15 Probability and nonprobability sampling

10.15 - 10.30 Coffee break

10.30 - 11.00 Computeradministered interviews and wiki surveys

11.00 - 11.30 Combining surveys and big data

11.30 - 12.00 Group exercise introduction

12.00 - 12.30 Begin group exercise

12.30 - 1.30 Lunch

1.30 - 3.15 Continue group exercise

3.15 - 3.45 Discuss activity and opensource data

3.45 - 4.00 Break

14.00 - 16.00: Office and Consultation Hour: Ridhi Kashyap

Contact the Speaker or the Organizer for a specific time frame.

4.00 - 5.30 Guest speaker:

Ridhi Kashyap

Measuring Global Gender Inequality Indicators using Large-Scale Online Advertising Data

The United Nations Sustainable Development Goals (SDGs) are a key instrument in setting the agenda around global development until 2030. Although the SDGs come with several indicators against which countries ought to measure their progress, existing data sources to measure this progress, especially in relation to gender equality, are often (i) outdated, (ii) lacking international comparability, (iii) lacking appropriate disaggregation, or (iv) missing completely.

This talk will describe how anonymous, aggregate data from online plattforms can be leveraged and combined with conventional data sources from surveys to measure and 'nowcast' gender inequality indicators globally. I will illustrate the process of using and validating such non-representative data to measure global gender gaps in: i) internet and mobile phone use, ii) post-secondary education, iii) skilled occupations.

Experiments - Saturday 03.08 9.00 - 9.15 Logistics 9.15 - 9.30 What, why, and which experiments? 9.30 - 9.45 Moving beyond simple experiments 9.45 - 10.15 Four strategies for experiments 10.15 - 10.30 Coffee break Afternoon off! 10.30 - 11.00 Zero variable cost data and musiclab 11.00 - 11.15 Break 11.15 - 12.15 High-throughput behavioral science using virtual labs by guest speaker Abdullah Almaatouq (SICSS 2017) 12.15 - 12.30 Logistics

12.30 - 1.30 Lunch

Monday 05.08	Tuesday 06.08
9.00 - 9.15 Logistics	9.00 - 12.30 Work on Group Projects
9.15 - 10.30 Speed-dating and group formation	12.30 - 1.30 Lunch
12.30 - 1.30 Lunch	
1.30 - 3.00 Guest lecture.	1.30 - 3.00 Guest lecture.
Martijn Schoonvelde	Milena Tsvetkova
Text Analysis and Political Rhetoric	Combining In Vitro with In Cilico Social Research
Politicians deliver speeches on a day- to-day basis. These speeches are a great resource to learn about all the politics that happens in between elections. They may serve as a testing	Prof. Tsvetkova will talk about her wor on the emergence of cooperation segregation, and inequality in socia groups that exemplifies how empirica data from behavioral experiments an

ground for new policy ideas, drive the media agenda and influence the public. What is more, they may give researchers access to political leaders who are otherwise difficult to reach.

In this talk I will discuss the potential and challenges of analyzing political rhetoric using computational methods. Themes concern the promise of machine translation, causal inference and the drivers of political rhetoric. groups that exemplifies how empirical data from behavioral experiments and simulation results from agent based models can inform each other. Agent based models can be used to make testable empirical predictions, while empirical data can be used to specify, calibrate, validate, and test models.



9.00 - 12.30 Presenting Group Projects

12.30 - 1.30 Lunch

1.30 - 1.30 Presenting Group Projects 6.00 - 7.30 Closing Dinner

During the group project days, participants are allowed to use either the seminar rooms in FG1 or the lab rooms in the Rechenzentrum (RZ).

Friday 09.08

Participants' Depart

Participant List

Α

Aleksandra Urman University of Bern Communications/Journalism Alexander Brand University of Bamberg Sociology Andrea Hasenkopf University of Bamberg Political Science

С

Christopher Schmidt University of Bamberg Sociology

D

Daniel Mayerhoffer University of Bamberg Political Science

Ε

Endre Borbáth FU, WZB Berlin Political Science

F

Florian Gilberg University Duisburg-Essen Political Science Franziska Weeber University of Konstanz Data Science

Indira Sen GESIS, University of Koblenz Computer Science

J

Jannis Denecke University of Konstanz Psychology Johannes Geiger University of Essex Political Science Julia Leschke LSE, London Political Science

Participant List

L

Lea Cohausz University of Mannheim Data Science Leonie Julia Geyer University of Bamberg Political Science Liane Rothenberger Technische Universität Ilmenau Communications/Journalism Lucas Sage Sorbonne Université, University of Trento Sociology

Μ

Manuel Kleinert University of Giessen Sociology Marc Luettecke University of Konstanz Data Science Meng Chen Webster Vienna Private University Communications/Journalism Muhamma Qasim Pasta Usman Institute of Technology Computer Science

Ν

Nourhan Elsayed University of Mannheim Political Science

S

Sophie Hornheber University of Mannheim Sociology Stephan Simon University of Bamberg Political Science Susanne Freund University of Eichstätt-Ingolstadt Psychology

The Bamberg Graduate School of Social Sciences

The Bamberg Graduate School of Social Sciences was established in 2010 to create an innovative working and learning environment for exceptionally qualified doctoral researchers.

In the disciplines of Sociology, Political Science, Psychology and Educational Science, the Graduate School fosters and promotes the next generation of researchers in their methodologically oriented studies.

As multidisciplinary Graduate а School, the Bamberg Graduate School of Social Sciences offers a structured programme of training and education for doctoral researchers in the Faculties of Social Sciences, Economics, Business Administration and Human Sciences. While firmly anchored in one academic discipline, doctoral students are encouraged to search for innovative solutions to their research problems beyond the confines of a single subject. A tailored and flexible doctoral training in courses on the frontiers of subject-specific knowledge, on research methods and on professional skills supports doctoral students who aim for international excellence both in their aspirations and in their work.

Summer Schools such as SICSS are the result of a course programme that is personalized and based on an individual assessment of its students' prior education and research needs. This Individual Research Training Plan (IRTP) will be elaborated througout the different doctoral stages in coordination with the supervisor and the management of the Graduate School.

Students striving to achive a PhD have the possibility to apply for either a regular or an associate membership. Prospective associate doctoral students (i.e. selffunded, e.g. by a position as a Research Assistant at the University of Bamberg or other local research institutes) are usually already enrolled as doctoral candidates at the University of Bamberg. They may, for example, be employed as lecturers or researchers, work on their thesis parttime or receive a scholarship from another institution, but do not receive funding from BAGSS. Candidates need to find a supervisor from the BAGSS faculty when applying for an associate membership.

Current regular doctoral students are fulltime researchers funded either by BAGSS and the Excellence Initiative or by an external institution (e.g. the DAAD, other bodies funding doctoral studies based on academic excellence). Furthermore, there is also the possibility to apply for a post-doc membership to gain the opportunity for funding.

The Bamberg Graduate School of Social Sciences

Doctoral Training:

- Close personal supervision by three professors
- Modern, individual and flexible course programme
- Methodological and theoretical courses
- Participation in Joint-Workshops or events with affiliated insitutions in Bamberg (LIfBi, TraC, Partner Universities etc.)

Research Areas

- A1: Education, Personal Development and Learning from Early Childhood to Adulthood
- A2: Educational and Social Inequality Across the Entire Life Course
- A3: Changes in Human Capital, Labour Marktes and Demographic Structures and their Impact on Social Structures in Modern Societies
- A4: Governance, Insitutional Change and Political Behavior

Support

- Research and travel support
- Dedicated office space & IT equipment

Preparation for the Job Market

- Workshops in transferable and professional skills
- Teaching oppurtinities
- Higher education didactics
- Career development workshops

For further information about our Graduate School, please visit the website or follow us on Twitter and Facebook!

Web:

www.uni-bamberg.de/bagss

Twitter: @BAGSS5

Facebook:

@bagssbamberg

General Information

General Information

Refreshment Breaks

In the morning and afternoon breaks, coffee, soft drinks and small snacks, e.g. pretzels, small cakes are offered in the hallway in front of room FG1/00.06 and 00.08

Lunch Breaks

For lunch, we recommend visiting the university's cafeteria or mensa. On workdays the mensa is open from 11.30 to 14.30. Throughout SICSS, we will provide you with a Guest Card that is already loaded with $80 \in$. The Guest Card is your primary way of paying at the cafeteria or mensa. In case the preload is spent, you can op up the card at one of the card automates inside the mensa.

Wi-Fi

You will also have free Wi-Fi access at the University of Bamberg. In general, you have many hotspots that support @BayernWLAN, which is a free Wi-Fi service provided by the Bundesland of Bavaria.

Working Space

If you look for a quiet space to check your e-mails or similar, feel free to use the working space at FG1 room 00.06 (across the kitchen). Please note that we don't lock the door or keep a watch, so make sure to leave no valuables in the room.

Public Transportation

The most frequent bus connections from SICSS to the city centre are the lines 901, 907, 915 and 931. They leave from either Feldkirchenstraße or Kloster-Banz-Straße and stop at the train station, Luitpoldstraße and at the central bus station (ZOB).

Bus tickets are available from the bus driver. The single fare is EUR 1.90. Alternatively, you could get a multi-trip ticket for four trips which costs EUR 6.50. Please note that you have to pay in cash at the bus driver's. For bus schedules check www.vgn.de or aks on the reception.

Further Questions?

For all further questions, please refer to our student assistants or the organizers. They will be available to support you throughout the workshop. SICSS Office is located in FG1/01.06

Notice of Photography

Photographs will be taken during the Summer Institute. The photographs will be used by the Bamberg Graduate School of Social Sciences for the purpose of promoting its activities and may be published on its website, social media channels and in other promotional materials for the graduate school. If you do not wish to appear in the photographs, please inform our photographer Madalena dos Reis Goncalves (marketing.bagss@uni-bamberg.de).

SICSS Rooms

Lecture Room: FG1/00.08 Seminar Room: FG1/00.06 Additional Seminar Rooms: RZ SICSS Office: FG1/01.06 Consultation and Office Hours: FG1/01.09

Opening hours:

Mensa - hot food: Mon - Fri: 11.30 - 14.00

Cafeteria - cold food, coffee: Mon-Thu: 08.00-15.00 Fri: 08.00 - 14.30

University Library: Mon- Fri: 08.30 - 24.00 Sat - Sun: 10.00 - 20.00

Connect with us:



TWITTER t @BAGSS5

Bamberg Graduate School of Social Sciences



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BAMBERG GRADUATE SCHOOL OF SOCIAL SCIENCES







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