Proseminar

Computational Political Science

Wednesday, 8.15 - 9.45, D433

University of Konstanz, Germany
Department of Politics and Public Administration
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Summary

Millions of people exchange their opinions and arguments on the web every day. Political parties try to recruit new voters with online campaigns. Civilians in autocracies use social media to circumvent censorship and regimes install digital surveillance techniques to suppress mass uprisings. In what are the most exciting times in the social sciences, we observe a rapid increase of scientifically relevant data on the one hand and computer-based methods to analyze such complex phenomena on the other.
In this seminar, we will explore a selection of these ongoing developments from a political science perspective. Thereby, our main focus is on data-driven computational political science. Specifically, we will learn how new data sources—like social media services, search engines, or blogs—can be exploited with the help of computational techniques to gain a better understanding of how people act and think, politically. Further, we will discuss methodological and ethical issues in the analysis of big data.

Requirements

The requirements for successfully completing this course are:

1. Regular attendance. I will tolerate up to two unexcused absences. Others beyond that require a written documentation (e.g., a doctor's certificate).

2. Preparation of texts. We will discuss one or more texts in each session. You are expected to have carefully read these texts in advance. In particular, you should be able to answer the following questions:

   - Which question does the author intend to answer? (*research question*)

   - How does the author proceed to answer the question? (*methodology*)

   - What are the main conclusions drawn by the author? (*results*)

   - Which parts of the paper did you fail to understand? (*problems*)

   - What do you think of the paper? (*critique*)

   Some of the sessions will be introduced by a short multiple choice quiz on the mandatory literature. These little tests make up 10% of the final grade.

3. Short presentation (10 minutes). Texts available for presentation are marked with an asterisk (*) in the schedule. Details to follow. The presentation makes up 20% of the final grade.

4. Response paper (about 500 words). Details to follow. The response paper makes up 20% of the final grade.

5. Literature review (about 3,000 words), including electronic file from the reference management software. Details to follow. The review makes up 50% of the final grade.

Course Materials

All texts and other course materials are available from ILIAS at

https://ilias.uni-konstanz.de/ilias/goto_ilias_uni_crs_425161.html

Course updates are sent over ILIAS, so please check your Uni Konstanz email account regularly.

A Note on Plagiarism

Please familiarize yourself with the Department's policies for academic integrity: http://www.polver.uni-konstanz.de/studienorganisation/wissenschaftliches-arbeiten/plagiate/. I take a stand for a zero tolerance policy towards plagiarism. If you plagiarize in your seminar work, regardless of the amount of text affected, the work will be graded 5.0. In particularly severe cases, you are at risk of loosing the right to continue your studies at the department.

Schedule

Note: Unmarked texts are required reading. You are expected to prepare these papers in advance of a session. Presentation papers are marked with one asterisk (*).

Introduction

15.04.: Overview and Organizational Matters

22.04.: The Emergence of Computational Social Science

Conte, R., *N. Gilbert*, *G. Bonelli*, *C. Cioffi-Revilla*, *G. Deffuant*, *J. Kertesz*, *V. Loreto*, *S. Moat*, *J.-P. Nadal*, *A. Sanchez*, *A. Nowak*, *A. Flache*, *M. San Miguel*, and *D. Helbing*, 2012: Manifesto of computational social science. European Physical Jounral Special Topics 214:325–346.

Lazer, David, *Alex Pentland*, *Lada Adamic*, *Sinan Aral*, *Albert Laszlo Barabasi*, *Devon Brewer*, *Nicholas Christakis*, *Noshir Contractor*, *James Fowler*, *Myron Gutmann*, *Tony Jebara*, *Gary King*, *Michael Macy*, *Deb Roy*, and *Marshall Van Alstyne*, 2009: Life in the network: the coming age of computational social science. Science 323:721–723.

Scientific practice: How to give a good presentation.
Preparatory reading 1: http://speaking.io/
Preparatory reading 2: Salmond, Rob, and David T. Smith, 2013.

29.04.: Promises and Pitfalls of Big Data

González-Bailón, Sandra, 2013: Social Science in the Era of Big Data. Policy and Internet 5:147–160.

Keele, Luke, 2015: The Discipline of Identification. PS Political Science & Politics 48:102–105.

Anderson, Chris, 2008: The End of Theory: The Data Deluge Makes the Scientific Method Obsolete. Wired Magazine (June 23), http://archive.wired.com/science/discoveries/magazine/16-07/pb_theory.

Scientific practice: How to read research papers

Preparatory reading 1: http://tep.uoregon.edu/resources/exchange/research/readingjournalarticles.html

Preparatory reading 2: http://www.cs.columbia.edu/~hgs/netbib/efficientReading.pdf

Voters, Parties and Elections in CPS

06.05.: Measuring Public Opinion and Political Preferences

Mellon, Jonathan, 2014: Internet Search Data and Issue Salience: The Properties of Google Trends as a Measure of Issue Salience. Journal of Elections, Public Opinion and Parties 24:45–72.

* *Barberá, Pablo*, 2015: Birds of the Same Feather Tweet Together. Bayesian Ideal Point Estimation Using Twitter Data. Political Analysis 23:76–91.

* *Bond, Robert*, and *Solomon Messing*, 2015: Quantifying Social Media's Political Space: Estimating Ideology from Publicly Revealed Preferences on Facebook. American Political Science Review 109:62–78.

* *Ragas, Matthew W.*, and *Hai Tran*, 2013: Beyond Cognitions: A Longitudinal Study of Online Search Salience and Media Coverage of the President. Journalism & Mass Communication Quarterly 90:478–499.

* *Bonica, Adam*, 2013: Ideology and Interests in the Political Marketplace. American Journal of Political Science 57:294–311.

13.05.: Parties and Campaigning

Shaw, Aaron, and *Bejamin Mako Hill*, 2014: Laboratories of Oligarchy? How The Iron Law Extends to Peer Production. Journal of Communication 64:215–238.

* *Enos, Ryan D.*, and *Anthony Fowler*, 2014: The Effects of Large-Scale Campaigns on Voter Turnout: Evidence from 400 Million Voter Contacts. Unpublished Manuscript.

* *Street, Alex*, *Thomas A. Murray*, *John Blitzer*, and *Rajan S. Patel*, 2015: Estimating Voter Registration Deadline Effects with Web Search Data. Political Analysis 1–2.

Scientific practice: How to cite correctly (and avert plagiarism)

Preparatory reading: http://www.apastyle.org/learn/tutorials/basics-tutorial.aspx

20.05.: Forecasting Elections

Gayo-Avello, Daniel, 2013: A meta-analysis of state-of-the-art electoral prediction from Twitter data. Social Science Computer Review 31:649–679.

* *Granka, Laura*, 2013: Using Online Search Traffic to Predict US Presidential Elections. PS Political Science and Politics 46:271–279.

* *Jungherr, Andreas*, *Pascal Jürgens*, and *Harald Schoen*, 2012: Why the Pirate Party Won the German Election of 2009 or The Trouble With Predictions: A Response to Tumasjan, A., Sprenger, T. O., Sander, P. G., & Welpe, I. M. "Predicting Elections With Twitter: What 140 Characters Reveal About Political Sentiment". Social Science Computer Review 30:229–234.

Scientific practice: How to manage scientific references

Preparatory reading: https://www.zotero.org/support/quick_start_guide

27.05.: NO CLASS!

Regimes and Conflict in CPS

03.06.: Measuring Conflict

Zeitzoff, Thomas, 2011: Using Social Media to Measure Conflict Dynamics: An Application to the 2008 - 2009 Gaza Conflict. Journal of Conflict Resolution 55:938–969.

* *Warren, T. Camber*, 2015: Explosive connections? Mass media, social media, and the geography of collective violence in African states. Journal of Peace Research 52:1–15.

* *Zeitzoff, Thomas*, *John Kelly*, and *Gilad Lotan*, 2015: Using social media to measure foreign policy dynamics: An empirical analysis of the Iranian–Israeli confrontation (2012-13). Journal of Peace Research 52:1–16.

Scientific practice: How to write a response paper

10.06.: ICT in Authoritarian Regimes

King, Gary, *Jennifer Pan*, and *Margaret E. Roberts*, 2013: How Censorship in China Allows Government Criticism but Silences Collective Expression. American Political Science Review 107:326–343.

* *Rød, Espen Geelmuyden*, and *Nils B. Weidmann*, 2015: Empowering activists or autocrats? The Internet in authoritarian regimes. Journal of Peace Research 52:1–14.

* *Gohdes, Anita R.*, 2015: Pulling the plug: Network disruptions and violence in civil conflict. Journal of Peace Research 52:1–16.

Scientific practice: How to write a literature review
Preparatory reading: http://www.duluth.umn.edu/~hrallis/guides/researching/litreview.html

17.06.: Excursion to the University Library

We meet at 8.05 at the J entrance of the library!

Scientific practice: How to do a literature research
Deadline: Response paper

24.06.: Forecasting Conflict

Beger, Andreas, *Cassy L. Dorff*, and *Michael D. Ward*, 2014: Ensemble forecasting of irregular leadership change. Research & Politics October-December:1–7.

* *Ramakrishnan, Naren*, *Patrick Butler*, *Sathappan Muthiah*, *Nathan Self*, *Rupinder Khandpur*, *Parang Saraf*, *Wei Wang*, *Jose Cadena*, *Anil Vullikanti*, *Gizem Korkmaz*, *Chris Kuhlman*, *Achla Marathe*, *Liang Zhao*, *Ting Hua*, *Feng Chen*, *Chang Tien Lu*, *Bert Huang*, *Aravind Srinivasan*, *Khoa Trinh*, *Lise Getoor*, *Graham Katz*, *Andy Doyle*, *Chris Ackermann*, *Ilya Zavorin*, *Jim Ford*, *Kristen Summers*, *Youssef Fayed*, *Jaime Arredondo*, *Dipak Gupta*, and *David Mares*, 2014: 'Beating the News' with EMBERS: Forecasting Civil Unrest Using Open Source Indicators. In: Proceedings of the 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, KDD '14, 1799–1808. New York, NY, USA: ACM.

* *Chadefaux, Thomas*, 2014: Early warning signals for war in the news. Journal of Peace Research 51:5–18.

* *Bastos, Marco T.*, *Dan Mercea*, and *Arthur Charpentier*, 2015: Tents, Tweets, and Events: The Interplay Between Ongoing Protests and Social Media. Journal of Communication .

Data Workshop

01.07.: Working with Social Media Data I (4 hours)

Preparatory reading: https://www.datacamp.com/swirl-r-tutorial

* *Barberá, Pablo*, and *Gonzalo Rivero*, 2014: Understanding the Political Representativeness of Twitter users. Social Science Computer Review 1–18.

* *Wu, Shaomei*, *Jake M. Hofman*, *Winter A. Mason*, and *Duncan J. Watts*, 2011: Who Says What to Whom on Twitter. In: Proceedings of the 20th International Conference on World Wide Web, WWW '11, 705–714. New York, NY, USA: ACM.

08.07.: Working with Social Media Data II (4 hours)

* *Dyagilev, Kirill*, and *Elad Yom-Tov*, 2014: Linguistic Factors Associated with Propagation of Political Opinions in Twitter. Social Science Computer Review 32:195–204.

* *Jungherr, Andreas*, and *Pascal Jürgens*, 2013: Forecasting the pulse. How deviations from regular patterns in online data can identify offline phenomena. Internet Research 23:589–607.

15.07.: NO CLASS!

15.09.: *Deadline*: Literature review