Stefan D. McCabe

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Network Science Institute
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EDUCATION

Doctor of Philosophy
Network Science
Northeastern University, Boston, MA   Fall 2016–

Master of Arts in Interdisciplinary Studies
Computational Social Science
George Mason University, Fairfax, VA   Spring 2016

Bachelor of Arts (*magna cum laude*),
Government & International Politics
George Mason University, Fairfax, VA   December 2013

PROFESSIONAL EXPERIENCE

Northeastern University   September 2016 –
Research Assistant, Lazer Lab
- Maintain and query a large dataset of tweets (2+ billion tweets from 1.5 million users) matched to TargetSmart voter file using Python and Spark.
- Using Google BigQuery and smartphone mobility data, developed a pipeline for estimating daily changes in Americans' mobility during the COVID-19 pandemic.
- Developed a Python library providing a consistent interface to commonly used graph distances and methods for reconstructing networks from time series data.

Microsoft Research NYC   May 2020 – August 2020
Research Intern
- Mentor: David Rothschild
- Ongoing research on how journalists' Twitter usage affects the articles they write.

George Mason Security   January 2012 – June 2016
Intern, IT Security Office
- Monitored and maintained university antivirus and intrusion detection system (IDS) logs.
- Assisted clients who were the victims of phishing attacks, password failure, etc.

RELEVANT SKILLS

Network science, computational social science, voter registration data, record linkage, American political behavior.

Programming languages: Python (advanced, relevant libraries: pandas, pyspark, numpy, networkx); R (intermediate, relevant libraries: tidyverse, igraph); Julia (beginner); C++ (beginner).

Other tools: Git, LaTeX, SQL, BigQuery.

PEER-REVIEWED PUBLICATIONS

- Hartle, Harrison, Brennan Klein, **Stefan McCabe**, Alexander Daniels, Guillaume St-Onge, Charles Murphy, and Laurent Hébert-Dufresne. 2020. "Network Comparison and the Within-Ensemble Graph Distance." *Proceedings of the Royal Society A* 476 (2243): 20190744. https://doi.org/10.1098/rspa.2019.0744. arXiv:2008.02415
- Hughes, Adam G., **Stefan D. McCabe**, William R. Hobbs, Emma Remy, Sono Shah, and David M. J. Lazer. Forthcoming. *Public Opinion Quarterly*. "Using Administrative Records and Survey Data to Construct Samples of Tweeters and Tweets."

REPORTS & PREPRINTS

- Klein, Brennan, Timothy LaRock, **Stefan McCabe**, Leo Torres, Lisa Friedland, Filippo Privitera, Brennan Lake, Moritz U. G. Kraemer, John S. Brownstein, David Lazer, Tina Eliassi-Rad, Samuel V. Scarpino, Alessandro Vespignani, and Matteo Chinazzi. 2020. "Reshaping a nation: Mobility, commuting, and contact patterns during the COVID-19 outbreak." https://covid19.gleamproject.org/mobility
- **McCabe, Stefan**, Leo Torres, Timothy LaRock, Syed Arefinul Haque, Chia-Hung Yang, Harrison Hartle, and Brennan Klein. 2020. "netrd: A library for network reconstruction and graph distances." arXiv: 2010.16019

TEACHING EXPERIENCE

PHYS 5116: Complex Networks and Applications   Fall 2020
Co-Instructor

- Graduate-level survey course on network science.
- Syllabus and course materials available here.

DS 2001: Programming with Data   Fall 2019
Social Science Practicum Instructor

- Hands-on, project-based course combining instruction in the basics of Python with readings in computational social science and data ethics.
- Syllabus available here; course materials available here.

SERVICE

- Program Committee, Politics and Computational Social Science (PaCSS) conference, 2018 and 2019 conferences.
- Treasurer, Network Science Institute Graduate Student Association, Fall 2019–
- Student Representative, Network Science Institute Graduate Admissions Council, 2019.
- Co-organizer, Society of Young Network Scientists pre-conference event, NetSci, Burlington, VT, 2019.

OTHER

American citizen. References available on request.