

Alyssa Smith

Curriculum Vitae

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Education and Qualifications

2021- present	PhD in Network Science Advisors: Prof. Brooke Foucault Welles and Prof. David Lazer	Northeastern University
2013 - 2017	BS in Humanities and Engineering (21E) with Comparative Media Studies and Computer Science	Massachusetts Institute of Technology

Awards and Honors

2024	Network Science Institute NetSeed Grant Awardee
2023	National Science Foundation Graduate Fellowship Awardee in Social Sciences - Computationally Intensive Research

Skills

- ▶ **Computational:** SQL-style & NoSQL databases; data ETL; HDFS; git; AWS CLI; Unix Command Line; pytorch/sklearn/nltk; {sci, num}py/pandas; natural language processing; inference; gephi/igraph/networkx; web scraping; Python 3.x; Java; R; graph machine learning
- ▶ **Non-computational:** critical discourse analysis; autoethnography; qualitative methods, particularly online ethnography

Coursework

Undergraduate

- ▶ **Computational:** Design and Analysis of Algorithms; Advanced Natural Language Processing; Online Machine Learning; Geometric Folding Algorithms
- ▶ **Media Studies/Communication:** Qualitative Research Methods; Media Systems & Texts; Current Debates in Media; Network Cultures
- ▶ **Thesis:** “The Discourse: An Online Debate” ([link](#))

Graduate

- ▶ **Core:** Introduction to Network Science; Network Science II; Social Networks; Dynamical Processes in Complex Networks; Machine Learning on Graphs
- ▶ **Elective:** Bayesian and Network Statistics; MIT 6.7810: Algorithms for Inference; Research Methods for the Social Sciences; Directed Study on Autoethnography

Professional Experience

2024	Data Science Intern	Independently designed and built predictive models and simulations on proprietary datasets	Wynd Network
2021-present	Research Assistant	I've been doing a mix of data science and data engineering in my research, as well as some critical work on social movements; right now I'm studying attention and how it expands or shifts over time.	Northeastern University
2019-2021	Labs Data Scientist	I worked creatively and collaboratively to design new models to enhance user experience on the KAYAK website. I collaborated with product managers and software engineers regularly to ensure that the project will be useful to stakeholders. I also was a co-lead of the LGBTQ+ Employee Resource Group.	KAYAK
2017-2019	Graph Data Engineer	I built and maintained models; handled data ingestion, pipelining, and testing; and designed services. I worked with diverse and often unpredictable data sources, and therefore had to create extremely robust, adaptable pipelines. I also worked on improving diversity and inclusion in the workplace.	Kensho Technologies
2016	Product Analytics Intern	Produced actionable insights through gathering and analysis of user data. Created a neural network language model of user-created tags and clustered users based on site usage data.	Tumblr
2015	Intern	Assessed the efficacy of municipal broadband programs in Massachusetts; published a MediaCloud blog post analyzing linking behavior in media coverage of the GamerGate controversy.	Berkman-Klein Center for Internet and Society, Harvard University

Current Research

- **Attention Brokers:** I am studying a type of influential Twitter user that uses their influence to create ties between their followers and a particular political cause. I call these users *attention brokers* because they span a structural hole and broker attention across it.
Status: Under review at *Social Networks*.
- **POTATO:** POTATO, or the Panel-based Open Term-level Aggregate Twitter Observatory, is an extension of the Lazer Lab's Twitter Panel dataset. It will make aggregate querying and visualization of the Twitter Panel dataset possible for researchers outside the lab while protecting panel members' privacy.
Status: in progress.
- **Twitter Following Patterns:** I am working with coauthors on an analysis of the following patterns of Twitter Panel members, both in terms of *who* they follow and *why* they make the following decisions they do. We also are developing a theory of attention as a resource and social media as an ecosystem.
Status: in progress.

- **Transfer Entropy for Transgender News:** My coauthors and I are using *transfer entropy*, a measure of “drivenness,” to understand who is driving the discourse about transgender people in U.S. local and national news media.
Status: Extended abstract accepted at the Bulletin of Applied Transgender Studies; awarded Network Science Institute NetSeed Grant; extended abstract submitted to IC2S2.

Service

2023 - 2024	Student Council President	This year, I designed and implemented a cross-disciplinary mentorship program and held an industry careers panel with alumni from the program. I also interface with program administration and raise student concerns with administration as necessary.
2022 - 2023	Student Council Cohort Liaison	Presented issues relevant to my cohort to the Student Council president; coordinated events for my cohort and the broader NetSI grad student body

Publications

Journal Articles

1. Smith, A. H., A. Gitomer, and B. F. Welles (Dec. 2023). You want a piece of me: Britney Spears as a case study on the prominence of hegemonic tales and subversive stories in online media. en. *First Monday*. (Visited on 12/07/2023).

Papers in conference proceedings

1. Bhatia, V., V. P. Akavoor, S. Paik, L. Guo, M. Jalal, A. Smith, D. A. Tofu, E. E. Halim, Y. Sun, M. Betke, P. Ishwar, and D. T. Wijaya (Nov. 2021). OpenFraming: Open-sourced Tool for Computational Framing Analysis of Multilingual Data. In: *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing: System Demonstrations*. Online and Punta Cana, Dominican Republic: Association for Computational Linguistics, pp.242–250. <https://aclanthology.org/2021.emnlp-demo.28> (visited on 05/13/2022).

Presentations

1. Smith, Alyssa (June 2022). *Attentional Cat-pital: Jorts The Cat's Disruption of Triad Closure Processes in Social Networks*. Cambridge, MA. https://asmithh.github.io/attentional_catpital_pacss_2022.pdf.
2. Rahul Bhargava, Hayden DelCiello, Zhen Guo, Alyssa Smith (Apr. 2023). *Pardon Our Dust: Public Data Infrastructure Under Construction*. MIT.
3. Smith, Alyssa (June 2023). *Attention Brokers: Adapting the Tertius Iungens to an Amplification Paradigm*. Portland, OR.

Conference posters

1. Smith, Alyssa (Aug. 2020). *Doing Data Science With Queer Identities*. Poster. <https://cssh.northeastern.edu/nulab/pacss/2020-posters/>.

Workshops

1. Smith, A. (Aug. 2021). *infograffiti*. original-date: 2020-09-20T21:51:39Z. <https://github.com/lentilsoup/infograffiti> (visited on 05/13/2022).