KATHERINE A. KEITH

kkeith@cs.umass.edu

EDUCATION

University of Massachusetts Amherst 2016–Present
M.S. / Ph.D. in Computer Science (in progress) *Amherst, MA*
GPA 3.88/4.0

Lewis & Clark College 2011–2015
B.A. in Mathematics with departmental honors, summa cum laude *Portland, OR*
Minor: Chinese
GPA 3.95/4.0

RESEARCH EXPERIENCE

Graduate Research Assistant September 2016–Present
University of Massachusetts, Amherst *Amherst, MA*

- Natural language processing, machine learning, and computational social science research
- Advisor: Dr. Brendan O'Connor

Undergraduate Research Assistant May 2014–August 2014
Lewis & Clark College *Portland, OR*

- Developed an agent-based simulation of intergenerational wealth transfer in medieval England
- Funding: Andrew W. Mellon Collaborative Student-Faculty Research Grant
- Advisor: Dr. Clifford Bekar

PEER-REVIEWED CONFERENCE PUBLICATIONS

Uncertainty-aware generative models for inferring document class prevalence. **Katherine A. Keith** and Brendan O'Connor. In *Proceedings of Empirical Methods in Natural Language Processing (EMNLP)*. 2018.

Monte Carlo Syntax Marginals for Exploring and Using Dependency Parses. **Katherine A. Keith**, Su Lin Blodgett, and Brendan O'Connor. In *Proceedings of North American Chapter of the Association for Computational Linguistics* (NAACL). 2018.

Identifying civilians killed by police with distantly supervised entity-event extraction. **Katherine A. Keith**, Abram Handler, Michael Pinkham, Cara Magliozzi, Joshua McDuffie, and Brendan O'Connor. In *Proceedings of Empirical Methods in Natural Language Processing (EMNLP)*. 2017.

INDUSTRY EXPERIENCE

Research Intern May–August 2018
CTO Data Science Team, Bloomberg L.P. *New York, New York*

- Mentor: Dr. Amanda Stent
- Correlated stock market signals with text of earnings call transcripts

TEACHING EXPERIENCE

Instructor, First-year seminar Fall 2019
University of Massachusetts Amherst

- Co-designed curriculum on "Ethical Issues Surrounding Artificial Intelligence Systems and Big Data" `https://github.com/sblodgett/ai-ethics`
- Led two weekly discussion sections comprising of 19 students each

Graduate Teaching Assistant
CS685: Advanced Natural Language Processing Spring 2018
University of Massachusetts Amherst

- Assisted students with course material and homework during weekly office hours
- Graded literature review assignment and in-class presentations
- Helped to design homeworks

Fulbright English Teaching Assistant August 2015–June 2016
U.S. Department of State *Kinmen, Taiwan*

- Taught first through sixth grade ESL courses in a public elementary school
- Facilitated multi-cultural dialogue and programming

Mathematics Tutor January 2012–May 2015
Lewis & Clark College *Portland, OR*

- Tutored Calculus I, Calculus II, and Linear Algebra for private one-on-one and group sessions
- Tutored in the Symbolic and Quantitative Resource Center (SQRC)

OTHER PROJECTS

- "Fairkit-learn: A multi-objective optimization approach to fairness in machine learning classifiers." *Advanced Software Engineering: Analysis and Evaluation* final class project (Spring 2018)
- "Class-conditional language modeling with LSTMs." *Machine Learning* final class project (Fall 2017)
- "Linguistically Motivated LSTM Architectures for Relation Extraction." *Neural Networks* final class project (Fall 2017)
- "Temporal, Embedding-Based Soft Deduplication of Police Killing Events." *Database Design & Implementation* final class project (Spring 2017)
- "Probabilistic Modeling of Trending Words on Twitter." *Statistical Machine Learning* final class project (Fall 2016)
- "Machine Learning Classification of Job Loss Twitter Messages." *Introduction to Natural Language Processing* final class project (Fall 2016)
- "Extending the Pontryagin Maximum Principle of Optimal Control Theory for Inequality Constraints and Discounting." *Lewis & Clark College Mathematics Department Senior Honors Thesis* (Spring 2015)
- "An Agent-Based Simulation of Intergenerational Mobility Amongst the English Medieval Peasantry." *Andrew W. Mellon Student-Faculty Research Project* (Summer 2014)

SELECTED COURSES

Machine Learning, Neural Networks, Probabilistic Graphical Models, Advanced Algorithms and Analysis, Advanced Software Engineering: Analysis and Evaluation, Database Design & Implementation, Introduction to Natural Language Processing, Advanced Probability & Statistics, Real Analysis, Abstract Algebra, Game Theory, Numerical Analysis, Differential Equations, Linear Algebra

SERVICE & OUTREACH

Reviewer

· ICWSM, 2019

Organizer, CICS Male Ally Workshop Series 2017–2018
University of Massachusetts Amherst
`https://github.com/mrlucasch/cics-male-allyship-workshops`

Student Volunteer, Girls Inc. Eureka! Summer Workshop August 1 & 3, 2017
University of Massachusetts Amherst

Mentor, Research Experience for Undergraduates (REU) Summer 2017
University of Massachusetts Amherst, College of Information and Computer Science

Social Co-Chair, Computer Science Women's Group January 2017–Present
University of Massachusetts Amherst Computer Science Women's Group

Student Volunteer, Women in Engineering and Computing Career Day October 24, 2016
University of Massachusetts Amherst

TECHNICAL STRENGTHS

Python (scipy, scikit-learn, numpy, pandas), Pytorch

FOREIGN LANGUAGES

Chinese (Mandarin)
HSK Level 4 (tested April 16, 2016)
CET Beijing: 16-week language-intensive immersion program (Spring 2014)

AWARDS & HONORS

· Computing Research Association of Women (CRAW) Graduate Cohort (2017, 2018)

· Empirical Methods in Natural Language Processing (EMNLP) Student Travel Scholarship (2017)

· Paul Utgoff Memorial Graduate Scholarship in Machine Learning (2016)

· Fulbright ETA Grantee with the U.S. Department of State (2015–16)

· Rhodes Scholarship Finalist (2015)

· Marshall Scholarship Finalist (2015)

· Rena Ratte Award, Lewis & Clark College (2015)

· Robert B. Pamplin Jr. Society Fellow, Lewis & Clark College (2012–2015)

· Dean's List, Lewis & Clark College (2011–2015)

· Project Pengyou National Leadership Fellow (2014)

· Phi Beta Kappa Member (2014–2015)

· Pi Mu Epsilon Member (2014–2015)

· Barbara Hirschi Neely Four-Year Full-Tuition Scholarship Recipient, Lewis & Clark College (2011–2015)

· NCAA Division III Cross-Country All-Academic (2012)

· Lewis & Clark Cross-Country Four-Year Varsity Letter Winner (2011–2015)