

# KATHERINE A. KEITH

kkeith@cs.umass.edu

## EDUCATION

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**University of Massachusetts Amherst**  
M.S. / Ph.D. in Computer Science

2016–Present  
*Amherst, MA*

**Lewis & Clark College**

B.A. in Mathematics (departmental honors, summa cum laude)  
Minor: Chinese

2011–2015  
*Portland, OR*

## RESEARCH EXPERIENCE

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**Graduate Research Assistant**

*University of Massachusetts, Amherst*

September 2016–Present

*Amherst, MA*

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

**Undergraduate Research Assistant**

*Lewis & Clark College*

May 2014–August 2014

*Portland, OR*

- Developed an agent-based simulation of intergenerational wealth transfer in medieval England
- Advisor: Dr. Clifford Bekar

## PEER-REVIEWED PUBLICATIONS

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

## TEACHING EXPERIENCE

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**Fulbright English Teaching Assistant**

*U.S. Department of State*

August 2015–June 2016

*Kinmen, Taiwan*

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

**Mathematics Tutor**

*Lewis & Clark College*

January 2012–May 2015

*Portland, OR*

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

## PRESENTATIONS & POSTERS

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- “Temporal, Embedding-Based Soft Deduplication of Police Killing Events.” *Database Design & Implementation* final class project (2017)
- “Probabilistic Modeling of Trending Words on Twitter.” *Statistical Machine Learning* final class project (2016)

- “Machine Learning Classification of Job Loss Twitter Messages.” *Introduction to Natural Language Processing* final class project (2016)
- “Extending the Pontryagin Maximum Principle of Optimal Control Theory for Inequality Constraints and Discounting.” *Lewis & Clark College Mathematics Department Senior Honors Thesis* (2015)
- “An Agent-Based Simulation of Intergenerational Mobility Amongst the English Medieval Peasantry.” *Andrew W. Mellon Student-Faculty Research Project* (2014)

## SELECTED COURSES

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Probabilistic Graphical Models, Database Design & Implementation, Statistical Machine Learning, Introduction to Natural Language Processing, Advanced Probability & Statistics, Real Analysis, Abstract Algebra, Game Theory, Numerical Analysis, Differential Equations, Linear Algebra

## SERVICE

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**Girls Inc. Eureka! Summer Workshop: An Introduction to Creative Computing with Scratch** August 1 & 3, 2017

*University of Massachusetts Amherst, College of Information and Computer Science*

**Research Experience for Undergraduates (REU) Mentor** Summer 2017

*University of Massachusetts Amherst, College of Information and Computer Science*

**Social Committee Member** January 2016–Present

*University of Massachusetts Amherst Computer Science Women's Group*

**Women in Engineering and Computing Career Day** October 24, 2016

*Student Volunteer: Play It/Code It - An Introduction to Programming with Games and Scratch*  
*University of Massachusetts Amherst*

## TECHNICAL STRENGTHS

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|                                     |                               |
|-------------------------------------|-------------------------------|
| <b>Primary programming language</b> | Python                        |
| <b>Databases</b>                    | SQL, Postgres                 |
| <b>Data science tools</b>           | R, scipy, scikit-learn, numpy |

## AWARDS & HONORS

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- Computing Research Association of Women (CRAW) Graduate Cohort Member (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 (2015)
- Robert B. Pamplin Jr. Society Fellow (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 (2011–2015)
- NCAA Division III Cross-Country All-Academic (2012)
- Lewis & Clark Cross-Country Four-Year Varsity Letter Winner (2011–2015)