

# KATHERINE A. KEITH

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## EDUCATION

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**University of Massachusetts Amherst**

Ph.D. in Computer Science (in progress)

M.S. in Computer Science, February 2020

2016–Present

*Amherst, MA*

**Lewis & Clark College**

B.A. in Mathematics with 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 (Economics)**

*Lewis & Clark College*

May 2014–August 2014

*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

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1. Text and Causal Inference: A Review of Using Text to Remove Confounding from Causal Estimates. **Katherine A. Keith**, David Jensen, and Brendan O'Connor. In *Proceedings of Annual Meeting of the Association for Computational Linguistics (ACL)*. 2020.
2. Modeling financial analysts' decision making via the pragmatics and semantics of earnings calls. **Katherine A. Keith** and Amanda Stent. In *Proceedings of Annual Meeting of the Association for Computational Linguistics (ACL)*. 2019.
3. 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.
4. 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.
5. 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

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**Research Intern**

*Bloomberg L.P.*

Summer 2020

*Remote*

- Mentor: Dr. Edgar Meij

## Research Intern

*CTO Data Science Team, Bloomberg L.P.*

May–August 2018  
*New York, New York*

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

## TEACHING EXPERIENCE

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### Instructor on Record

#### CS335: Machine Learning

Spring 2020

*Mt. Holyoke College*

- Sole instructor of the course and responsible for designing and giving lectures, holding office hours, developing problem sets, developing exams, and grading problem sets and exams.

### Instructor on Record

#### CS191: Computer Science First Year Seminar

Fall 2019

*University of Massachusetts Amherst*

- Co-designed curriculum on “Ethical Issues Surrounding Artificial Intelligence Systems and Big Data”
- 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)

## GRANTS

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- Kaggle Open Data Research Grant 2020 (\$5000). With Andy Halterman and Sheikh Sarwar.

## INVITED TALKS

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- Williams College’s Computer Science Colloquium—November 15, 2019
- Rutgers University’s Natural Language Processing Group—November 6, 2019
- Lewis & Clark College’s Mathematical Sciences Colloquium—September 24, 2018

## GUEST LECTURES

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- Mt. Holyoke College, Natural Language Processing—November 13, 2019
- Mt. Holyoke College, Natural Language Processing—October 10, 2019

- University of Massachusetts Amherst, Advanced Natural Language Processing—April 26, 2018

## SERVICE & OUTREACH

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### Reviewer

- EMNLP, 2020
- ACL, 2020
- ICWSM, 2019, 2020
- NAACL, 2019

### Co-chair, CSWomen

February 2019–January 2020

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

### Student Volunteer, Women in Engineering and Computing Career Day

October 28, 2019

*University of Massachusetts Amherst*

### Social Co-Chair, CSWomen

January 2017–January 2019

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

### “What is computer science?” 7th Grade Guest Lecture

Jan. 3, 2018 and Jan. 7, 2019

*Chief Joseph Middle School, Bozeman, Montana*

### Organizer, CICS Graduate 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*

### Student Volunteer, Women in Engineering and Computing Career Day

October 24, 2016

*University of Massachusetts Amherst*

## MENTEES

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- Sirius Just (Undergraduate Honors Thesis, 2019-2020; REU, Summer 2019)
- Tamas Palfi (REU, Summer 2019)
- Hieu Phan (REU, Summer 2019)
- Aaron Mueller (REU, Summer 2017)

## GRADUATE AWARDS & HONORS

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- Awarded *distinction* for candidacy portfolio submitted to the College of Information and Computer Sciences at University of Massachusetts Amherst (December 2019)
- Bloomberg Data Science Ph.D. Fellowship (awarded May 2019)
- 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)

## UNDERGRADUATE AWARDS & HONORS

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- 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)– *“This is the highest academic award given at Lewis & Clark and is given annually to one undergraduate of senior standing whose abilities and commitment have combined to produce work which is consistently of the greatest distinction.”* [https://college.lclark.edu/academics/honors/college\\_awards/](https://college.lclark.edu/academics/honors/college_awards/)
- Robert B. Pamplin Jr. Society Fellow, Lewis & Clark College (2012–2015)
- Dean’s List, Lewis & Clark College (2011–2015)
- 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)

## FOREIGN LANGUAGES

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### **Chinese (Mandarin)**

HSK Level 4 (tested April 16, 2016)

CET Beijing: 16-week language-intensive immersion program (Spring 2014)