

# Laure Thompson

## Assistant Professor

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## Research Interests

Natural language processing, machine learning, digital humanities, computational social science

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## Education

**PhD, Computer Science, Cornell University.** December 2020

Thesis: Understanding and Directing What Models Learn | Minor: Classical Archaeology  
Committee: David Mimno (chair), David Bamman, Caitlin Barrett, Dexter Kozen

**BS, Computer Science & BS, Electrical Engineering, University of Washington.** June 2013

*Cum Laude.* EE Concentration: Digital Signal Processing | Minors: Mathematics & Classical Studies

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## Academic Appointments

**Assistant Professor, University of Massachusetts Amherst.** 2020-Present

*Manning College of Information and Computer Sciences*

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## Publications

### *Journal Articles*

- **Computational Cut-Ups: The Influence of Dada.** Laure Thompson and David Mimno. *Journal of Modern Periodical Studies*. The Journal of Modern Periodical Studies Vol.8, No.2, 2018, pp. 179-195.

### *Peer-reviewed Conference Papers (\* = presenter)*

- **Modifying Exemplification in Long-form Question Answering via Retrieval.** Shufan Wang\*, Fangyuan Xu, Laure Thompson, Eunsol Choi, and Mohit Iyyer. Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL), 2022.
- **Phrase-BERT: Improved Phrase Embeddings from BERT with an Application to Corpus Exploration.** Shufan Wang\*, Laure Thompson, and Mohit Iyyer. Conference on Empirical Methods in Natural Language Processing (EMNLP), 2021.
- **Authorless Topic Models: Biasing Models Away from Known Structure.** Laure Thompson\* and David Mimno. International Conference on Computational Linguistics (COLING), 2018. *Best Paper Award: Best NLP Engineering Experiment.*

- **The Strange Geometry of Skip-Gram with Negative Sampling.** David Mimno and Laure Thompson\*. Conference on Empirical Methods in Natural Language Processing (EMNLP), 2017. *Outstanding Paper (Best Paper Honorable Mention)*.
- **Quantifying the Effects of Text Duplication on Semantic Models.** Alexandra Schofield\*, Laure Thompson, and David Mimno. Conference on Empirical Methods in Natural Language Processing (EMNLP), 2017.
- **Vale: Verifying High-Performance Cryptographic Assembly Code.** Barry Bond, Chris Hawblitzel, Manos Kapritsos, Rustan Leino, Jay R. Lorch, Bryan Parno, Ashay Rane\*, Srinath Setty, and Laure Thompson. USENIX Security Symposium, 2017. *Distinguished Paper Award*.
- **A Coalgebraic Decision Procedure for NetKAT.** Nate Foster, Dexter Kozen, Mae Milano, Alexandra Silva, and Laure Thompson\*. ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL), 2015.

### Other

- **Humanities and Human-Centered Machine Learning.** Laure Thompson and David Mimno. Book Chapter. Forthcoming.
- **Topic Modeling with Contextualized Word Representation Clusters.** Laure Thompson and David Mimno. Preprint: arXiv:2010.12626
- **Progressive Fusion for Multimodal Integration.** Shiv Shankar, Laure Thompson, and Madalina Fiterau. Preprint: arXiv:2209.00302

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## Talks

### Invited Talks and Panels

- **Computing for the Common Good.** Invited Panelist, Interdisciplinary Conversation, University of Massachusetts Amherst, February 2022.
- **Magic and Its Limits: Computational Categorization and Magical Gems.** The Future of the Past: Classics + Technology Workshop Series, Stanford Humanities Center, November 2021.
- **Studying Science Fiction at Scale.** Workshop on Narrative Understanding (WNU), June 2021.
- **A Symbiotic Future for Machine Learning and the Humanities.** Center for Humanistic Inquiry (CHI) Salon, Amherst College, March 2021.
- **Data Science for the Common Good.** Invited Panelist, Voices of Data Science at UMass Amherst, February 2021.
- **Interdependence in Action: The “Advanced Collaborative Support” Program from the HathiTrust Research Center.** Invited Panelist. HathiTrust Community Week, October 2020.
- **Understanding and Directing What Models Learn.** Machine Learning and Friends Lunch seminar, University of Massachusetts Amherst, October 2019.
- **Understanding and Directing the Learning of Latent Vector Spaces.** Graduate student colloquium, Rutgers University, April 2019.

- **Data Analysis for the Humanities.** Cornell Summer Graduate Fellowship in Digital Humanities program, June 2018.
- **Bilingual Topic Modeling in the *Patrologia Graeca*.** With David Mimno. Future Philologies: Digital Directions in Ancient World Text, April 2018.

### *Conference and Workshop Presentations*

- **Text as Data.** Discussant, Text as Data (TADA), October 2022.
- **What Do Contextualized Representations Represent?** Text as Data (TADA), October 2021.
- **Finding Speculative Fiction in HathiTrust.** Association for Computers and the Humanities (ACH) Conference, July 2021.
- **Constructing and Analyzing Short Science Fiction at Scale.** Digital Humanities (DH) Conference, July 2020.
- **Analysis of Visual Corpora with Deep Learning.** Chair and panelist. With Taylor Arnold, Peter Leonard, David Mimno, and Lauren Tilton. Association for Computers and the Humanities (ACH) Conference, July 2019.
- **Medieval MALLET Mishaps: Topic Modeling Difficult Corpora.** With David Mimno and Anna Fore Waymack. 54<sup>th</sup> International Congress on Medieval Studies, May 2019.
- **Authorless Topic Models: Biasing Models Away from Known Structure.** Poster presentation. Ninth Annual Conference on New Directions in Analyzing Text as Data (TADA), September 2018.
- **Measuring Oracular Authenticity: Distinguishing the Historical from the Legendary in the Oracles of Delphi.** LAWDNY Digital Antiquity Workshop at ISAW, December 2016.

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## Awards & Honors

- Selected Attendee for Rising Stars Workshop, 2019
- HathiTrust Research Center Advanced Collaborative Support with David Mimno, 2019
- Outstanding Teaching Assistant Award, 2019
- National Science Foundation Graduate Research Fellowship, 2014
- Cornell University Fellowship, 2013
- Gary Kildall Endowed Scholarship, 2012
- NASA Space Grant Scholarship, 2008-2012

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## Press

Cornell Chronicle, “Study uses neural networks to define Dada,” 2019.

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## Industry

- **Microsoft Research: Research Intern.** Summer 2016  
*Systems Research Group – Redmond, WA*
- **Google: Software Engineer Intern.** Summer 2012  
*DoubleClick Bid Manager – Kirkland, WA*

- **Microsoft: Software Development Engineer in Test Intern.** Summer 2011 *Windows Engineering Systems and Compatibility – Redmond, WA*
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## Teaching Experience

### Instructor.

*University of Massachusetts Amherst – Amherst, NY*

- Introduction to Social & Cultural Analytics: Spring 2021, Spring 2022
- Applications of Natural Language Processing: Fall 2021, Fall 2022

### Teaching Assistant.

*Cornell University – Ithaca, NY*

- Text Mining for History and Literature: Fall 2017
- System Security: Spring 2015, Spring 2019, Spring 2020

*University of Washington – Seattle, WA*

- Introduction to Compiler Construction: Winter 2013
  - Software Design & Implementation: Winter 2012
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## Student Supervision & Mentorship

### PhD Advisor.

*University of Massachusetts Amherst – Amherst, NY*

- Marisa Hudspeth. Present
- Chau Pham. Present
- Maha Alkhairy. 2021- 2022.

### PhD Committee Member.

*University of Massachusetts Amherst – Amherst, NY*

- Xiang Lorraine Li. 2022.

### PhD Synthesis Project Reader.

*University of Massachusetts Amherst – Amherst, NY*

- Shiv Shankar. 2022
- Puxuan Yu. 2021
- Shufan Wang. 2021

### Masters.

*University of Massachusetts Amherst – Amherst, NY*

- Virginia Partridge. Independent Study: Spring 2021, Fall 2021
- Jennifer Halbleib. MS Project Reader: 2020

### Undergraduate.

*University of Massachusetts Amherst – Amherst, NY*

- Colette Basillerre. Honors Thesis Reader: 2021

*Cornell University – Ithaca, NY*

- Amani Ahmed. REU: Summer 2019
- Jacob Wasserstein. REU: Summer 2019
- Aaliya Kahn. Independent Study: Spring 2019
- Isabelle De Brabanter. Independent Study: Fall 2018, Spring 2019

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## Service

### Program Committees and Reviewing

#### *Grant Reviewing*

- Panelist, National Endowment for the Humanities, DHAG. 2021

#### *Natural Language Processing Conferences*

- ACL Rolling Review. 2021
- ACL. 2021
- EACL. 2021
- EMNLP. 2022 (Area Chair)

#### *Digital Humanities & Computational Social Science Conferences*

- ACH. 2021
- DH. 2020, 2022
- DH Unbound. 2022
- TADA. 2022

#### *Workshops*

- Workshop on Computational Linguistics for Cultural Heritage, Social Sciences, Humanities and Literature (LaTeCH-CLfL). 2021, 2022
- Workshop on Narrative Understanding, Storylines, and Events (NUSE). 2020
- AACL-IJCNLP Student Research Workshop (SRW). 2022

### Institutional Service

#### *University of Massachusetts Amherst, College of Information & Computer Sciences*

- Executive & Budget Committee Member. 2022-2023.
- Teaching Faculty Search Committee Member. 2021-2022.
- AFR Committee Member. 2021-2022.
- PhD Admissions Committee Member. 2020-2021.
- CARE Mentoring Committee Member. 2020-2021.

#### *Cornell University, Computer Science*

- Research Night Organizer. Spring and Fall 2019
- PhD Admissions Committee Member. 2018-2019
- Vice President, Computer Science Graduate Organization. Fall 2015
- Prospective Grad Student Visit Day Student Organizer. 2014
- Fellowship Archive and Workshop Organizer. 2013-2015

#### *University of Washington, Computer Science & Engineering*

- Event Coordinator, UW ACM Student Chapter. 2012-2013
- Public Relations Officer, UW ACM-W Student Chapter. 2011-2012

### Community Service

- Tech Savvy Workshop Leader. 2017
- Expanding Your Horizons Workshop Leader. 2015, 2016, 2017, 2018