

# PATRICK VERGA

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## EDUCATION

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**University of Massachusetts Amherst**  
Ph.D. in Computer Science 2012 — 2019  
M.S. in Computer Science

**University of Massachusetts Amherst**  
B.S. in Neuroscience 2008 — 2012  
B.A. in Computer Science  
Minor in Philosophy

## RESEARCH & PROFESSIONAL EXPERIENCE

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**Research Assistant, [University of Massachusetts Amherst](#)** Feb 2015 — Present  
College of Information and Computer Sciences  
Advisor: [Andrew McCallum](#)

**Research Intern, [Chan Zuckerberg Initiative](#)** May 2017 — Aug 2017  
Meta Team  
Supervisor: [Ofer Shai](#)

**Research Intern, [Google AI](#)** June 2016 — Sept 2016  
Commonsense Team  
Supervisor: [Colin Evans](#), [Chris Waterson](#)

**Research Assistant, [University of Massachusetts Amherst](#)** May 2013 — Feb 2015  
College of Information and Computer Sciences  
Advisor: [James Allan](#)

**Research Assistant, [University of Massachusetts Amherst](#)** May 2011 — May 2013  
College of Information and Computer Sciences  
Advisor: [Hava Siegelmann](#)

**Research Assistant, [University of Massachusetts Amherst](#)** Sep 2010 — Sep 2011  
Psychological and Brain Sciences  
Advisor: [Ed Pace-Schott](#), [Rebecca Spencer](#)

## AWARDS / HONORS

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- Best Long Paper Award, EMNLP 2018
- Howard Hughes Medical Institute Summer Research Award, 2011

- [1] Andrew Drozdov\*, **Patrick Verga\***, Mohit Yadev\*, Mohit Iyyer, and Andrew McCallum. [Unsupervised Latent Tree Induction with Deep Inside-Outside Recursive Auto-Encoders](#). In *Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT)*, Minneapolis, Minnesota, June 2019.
- [2] Emma Strubell, **Patrick Verga**, Daniel Andor, David Weiss, and Andrew McCallum. [Linguistically-Informed Self-Attention for Semantic Role Labeling](#). In *Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Brussels, Belgium, October 2018. **Best long paper award**.
- [3] Nathan Greenberg, Trapit Bansal, **Patrick Verga**, and Andrew McCallum. [Marginal Likelihood Training of BiLSTM-CRF for Biomedical Named Entity Recognition from Disjoint Label Sets](#). In *Conference on Empirical Methods in Natural Language Processing (EMNLP-short)*, Brussels, Belgium, October 2018.
- [4] Shikhar Murty\*, **Patrick Verga\***, Luke Vilnis, Irena Radovanovic, and Andrew McCallum. [Hierarchical Losses and New Resources for Fine-grained Entity Typing and Linking](#). In *The 56th Annual Meeting of the Association for Computational Linguistics (ACL)*, Melbourne, Australia, July 2018.
- [5] **Patrick Verga**, Emma Strubell, and Andrew McCallum. [Simultaneously Self-attending to All Mentions for Full-Abstract Biological Relation Extraction](#). In *Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT)*, New Orleans, Louisiana, June 2018.
- [6] Shikhar Murty, **Patrick Verga**, Luke Vilnis, and Andrew McCallum. [Finer Grained Entity Typing with TypeNet](#). In *6th Workshop on Automated Knowledge Base Construction (AKBC)*, Long Beach, California, December 2017.
- [7] **Patrick Verga**, Emma Strubell, Ofer Shai, and Andrew McCallum. [Attending to All Mention Pairs for Full Abstract Biological Relation Extraction](#). In *6th Workshop on Automated Knowledge Base Construction (AKBC)*, Long Beach, California, December 2017.
- [8] Emma Strubell, **Patrick Verga**, David Belanger, and Andrew McCallum. [Fast and Accurate Entity Recognition with Iterated Dilated Convolutions](#). In *Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Copenhagen, Denmark, September 2017.
- [9] **Patrick Verga**, Arvind Neelakantan, and Andrew McCallum. [Generalizing to Unseen Entities and Entity Pairs with Row-less Universal Schema](#). In *Proceedings of the 15th Conference of the European Chapter of the Association for Computational Linguistics: Volume 1, Long Papers (EACL)*, pages 613–622, Valencia, Spain, April 2017. Association for Computational Linguistics.
- [10] Haw-Shiuan Chang, Abdurrahman Munir, Ao Liu, Johnny Tian-Zheng Wei, Aaron Traylor, Ajay Nagesh, Nicholas Monath, **Patrick Verga**, Emma Strubell, and Andrew McCallum. [Extracting Multilingual Relations under Limited Resources: TAC 2016 Cold-Start KB construction and Slot-Filling using Compositional Universal Schema](#). In *Text Analysis Conference (Knowledge Base Population Track) '16 Workshop (TAC KBP)*, Gaithersburg, Maryland, USA, November 2016.

- [11] **Patrick Verga** and Andrew McCallum. [Row-less Universal Schema](#). In *Proceedings of the 5th Workshop on Automated Knowledge Base Construction*, pages 63–68, San Diego, CA, June 2016. Association for Computational Linguistics.
- [12] **Patrick Verga**, David Belanger, Emma Strubell, Benjamin Roth, and Andrew McCallum. [Multilingual Relation Extraction using Compositional Universal Schema](#). In *Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT)*, San Diego, California, June 2016.
- [13] Benjamin Roth, Nicholas Monath, David Belanger, Emma Strubell, **Patrick Verga**, and Andrew McCallum. [Building Knowledge Bases with Universal Schema: Cold Start and Slot-Filling Approaches](#). In *Text Analysis Conference (Knowledge Base Population Track) '15 Workshop (TAC KBP)*, Gaithersburg, Maryland, USA, November 2015.
- [14] Edward F Pace-Schott, Zoe S Rubin, Lauren E Tracy, Rebecca MC Spencer, Scott P Orr, and **Patrick W Verga**. [Emotional trait and memory associates of sleep timing and quality](#). *Psychiatry research*, 229(3):999–1010, 2015.
- [15] Laura Dietz and **Patrick Verga**. [UMass at TREC WEB 2014: Entity Query Feature Expansion using Knowledge Base Links](#). *TREC WEB*, 2014.
- [16] Edward F Pace-Schott, Rebecca MC Spencer, Shilpa Vijayakumar, Nafis AK Ahmed, **Patrick W Verga**, Scott P Orr, Roger K Pitman, and Mohammed R Milad. [Extinction of conditioned fear is better learned and recalled in the morning than in the evening](#). *Journal of psychiatric research*, 47(11):1776–1784, 2013.
- [17] Dimitri Nowicki, **Patrick Verga**, and Hava Siegelmann. [Modeling reconsolidation in kernel associative memory](#). *PloS one*, 8(8):e68189, 2013.
- [18] Edward F Pace-Schott, **Patrick W Verga**, Tobias S Bennett, and Rebecca MC Spencer. [Sleep promotes consolidation and generalization of extinction learning in simulated exposure therapy for spider fear](#). *Journal of psychiatric research*, 46(8):1036–1044, 2012.

## TEACHING

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<b>Team Mentor</b> , <a href="#">University of Massachusetts Amherst</a> Course: <a href="#">MS Industry Mentorship Program</a> , <a href="#">Chan Zuckerberg Initiative</a> with <a href="#">Andrew McCallum</a> , <a href="#">Sunil Mohan</a>	Jan 2018 — May 2018
<b>Teaching Assistant</b> , <a href="#">University of Massachusetts Amherst</a> Course: <a href="#">Data Structures</a> with <a href="#">James Allan</a>	Sept 2013 — Dec 2013

## SERVICE & OUTREACH

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- Mentor, Girls Inc. Eureka! Workshop (Programming in Scratch), 2015, 2016, 2018.
- Mentor, CAITE Women in Engineering & Computing Career Day, 2015, 2016.
- Program Committees: ACL 2018, 2019; EMNLP 2017, 2018; NAACL 2019, AAAI 2019; AKBC 2019.
- Graduate Representative, UMass CICS, 2015–2016.

- Andrew Drozdov (2018). First year PhD student at University of Massachusetts Amherst. *Unsupervised latent tree induction with deep inside-outside recursive auto-encoders.*
- Shikhar Murty (2018). Post-undergraduate visiting researcher at University of Massachusetts Amherst. *Hierarchical representations of entities and their types.*
- Yi-Pei Chen (2018). MS graduate independent study at University of Massachusetts Amherst. *Cross-sentence biological relation extraction with linguistically informed self-attention.*
- Neha Choudhary (2018). MS graduate independent study at University of Massachusetts Amherst. *Disease-phenotype relation extraction with universal schema.*
- Nathan Greenberg (2017-2018). Undergraduate and then MS researcher at University of Massachusetts Amherst. *Marginal Likelihood Training of BiLSTM-CRF for Biomedical Named Entity Recognition from Disjoint Label Sets.*
- Mohit Yadav (2017-2018). First/second year PhD student at University of Massachusetts Amherst. *Unsupervised latent tree induction with deep inside-outside recursive auto-encoders.*
- Dongxu Zhang (2017-2018). First/second year PhD student at University of Massachusetts Amherst. *Rowless universal schema with query specific entity and entity pair representations.*
- Colin Samplawski (2017). First year PhD student at University of Massachusetts Amherst. *Active learning in universal schema relation extraction.*
- Abdurrahman Munir (2016). Undergraduate Louis Stokes Alliance for Minority Participation (LSAMP) research fellow at University of Massachusetts Amherst. *Multilingual named entity recognition in Arabic, Chinese, and English.*
- Adarsh Subbaswamy (2015). Undergraduate UMass REU Program in Data Science, University of Massachusetts Amherst. *Semi-supervised methods for inducing multilingual word embedding.*