

# Daniel Khashabi

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## Research Theme

Computational (Artificial) Intelligence, through the lens of Natural Language Understanding.

## Education

- 2012–2019     *Ph.D. in Computer Science*  
University of Pennsylvania (2017-2019)  
University of Illinois, Urbana-Champaign (2012-2017)  
Advisor: Prof. Dan Roth  
Thesis title: *Reasoning-Driven Question-Answering for Natural Language Understanding*
- 2008–2012     *B.Sc. in Electrical Engineering*  
Minor in Computer Science (2010-2012)  
Amirkabir University of Technology (Tehran Polytechnic)  
Advisor: Prof. Hamid Sheikhzadeh
- 2003–2008     *Diploma in Math and Physics*, Shahid Beheshti High School, Maragheh, Iran  
National Organization For Development of Exceptional Talents (NODET)

## Research Positions

- 2019-now     *Young Investigator*, Allen Institute for Artificial Intelligence, Seattle, WA.
- 2019     *Post-doctoral fellow*, University of Pennsylvania, Philadelphia, PA
- 2017–2019     *Research Assistant*, University of Pennsylvania, Philadelphia, PA
- 2012–2017     *Research Assistant*, University of Illinois, Urbana-Champaign, IL
- Summer, 2016     *Research Intern*, Allen Institute for Artificial Intelligence (AI2), Seattle, WA
- Summer, 2015     *Research Intern*, Allen Institute for Artificial Intelligence (AI2), Seattle, WA
- Summer, 2014     *Research Intern*, Microsoft Research, Redmond, WA
- Summer, 2013     *Research Intern*, Microsoft Research, Cambridge, UK
- Summer, 2011     *Research Intern*, Media Processing Lab, Tehran Polytechnic, Tehran, Iran

## Publications

### Peer-reviewed Publications

\* Venues are topically color-coded (*NLP*, *AI*, *Machine Learning*, *Vision*). Top tier venues are indicated with **bold**.

- [1] H. Zhang, Y. Song, D. Khashabi, and D. Roth.  
“Commonsense Knowledge Discovery from Linguistic Graphs”.  
In: *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*.  
2020.
- [2] B. Zhou, Q. Ning, D. Khashabi, and D. Roth.  
“Temporal Common Sense Acquisition with Minimal Supervision”.  
In: *Annual Meeting of the Association for Computational Linguistics (ACL)*.  
2020.
- [3] E. Sadeqi-Azer, D. Khashabi, A. Sabhwawal, and D. Roth.  
“Not All Claims are Created Equal: Choosing the Right Approach to Assess Your Hypotheses”.  
In: *Annual Meeting of the Association for Computational Linguistics (ACL)*.  
2020.
- [4] B. Zhou, D. Khashabi, Q. Ning, and D. Roth.  
““Going on a vacation” takes longer than “Going for a walk”: A Study of Temporal Commonsense Understanding”.  
In: *Conference on Empirical Methods in Natural Language Processing (EMNLP)*.  
2019.
- [5] S. Chen, D. Khashabi, C. Callison-Burch, and D. Roth.  
“PerspectroScope: A Window to the World of Diverse Perspectives”.  
In: *Annual Meeting of the Association for Computational Linguistics (ACL) - Demonstrations*.  
2019.
- [6] S. Chen, D. Khashabi, W. Yin, C. Callison-Burch, and D. Roth.  
“Seeing Things from a Different Angle: Discovering Diverse Perspectives about Claims”.  
In: *Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*.  
2019.
- [7] B. Zhou, D. Khashabi, C.-T. Tsai, and D. Roth.  
“Zero-Shot Open Entity Typing as Type-Compatible Grounding”.  
In: *Conference on Empirical Methods in Natural Language Processing (EMNLP)*.  
2018.
- [8] D. Khashabi, S. Chaturvedi, M. Roth, S. Upadhyay, and D. Roth.  
“Looking Beyond the Surface: A Challenge Set for Reading Comprehension over Multiple Sentences”.  
In: *Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*.  
2018.
- [9] D. Khashabi et al.  
“CogCompNLP: Your Swiss Army Knife for NLP”.  
In: *11th Language Resources and Evaluation Conference (LREC)*.  
2018.
- [10] D. Khashabi, T. Khot, A. Sabharwal, and D. Roth.  
“Question Answering as Global Reasoning over Semantic Abstractions”.  
In: *Proceedings of The Thirty-Second Conference on Artificial Intelligence (AAAI)*.  
2018.
- [11] D. Khashabi, T. Khot, A. Sabharwal, and D. Roth.  
“Learning What is Essential in Questions”.  
In: *Proceedings of the 21st Conference on Computational Natural Language Learning (CoNLL)*.  
2017.
- [12] P. Kordjamshidi, D. Khashabi, C. Christodoulopoulos, B. Mangipudi, S. Singh, and D. Roth.

- “Better call saul: Flexible programming for learning and inference in NLP”.  
In: *Proceedings of the 26th International Conference on Computational Linguistics (COLING)*.  
2016.
- [13] D. Khashabi, T. Khot, A. Sabharwal, P. Clark, O. Etzioni, and D. Roth.  
“Question Answering via Integer Programming over Semi-Structured Knowledge”.  
In: *Proceedings of the Twenty-Fifth International Joint Conference on Artificial Intelligence (IJCAI)*.  
2016.
- [14] M. Sammons, C. Christodoulopoulos, P. Kordjamshidi, D. Khashabi, V. Srikumar, and D. Roth.  
“EDISON: Feature Extraction for NLP, Simplified”.  
In: *Proceedings of the Tenth International Conference on Language Resources and Evaluation (LREC)*.  
2016.
- [15] P. Clark, O. Etzioni, T. Khot, A. Sabharwal, O. Tafjord, P. D. Turney, and D. Khashabi.  
“Combining Retrieval, Statistics, and Inference to Answer Elementary Science Questions”.  
In: *Proceedings of the Thirtieth Conference on Artificial Intelligence (AAAI)*.  
2016.
- [16] K. Quanrud and D. Khashabi.  
“Online Learning with Adversarial Delays”.  
In: *Proceedings of the 28th International Conference on Neural Information Processing Systems (NeurIPS)*.  
2015.
- [17] H. Peng, D. Khashabi, and D. Roth.  
“Solving Hard Coreference Problems”.  
In: *Proceedings of the Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL)*.  
2015.
- [18] D. Khashabi, S. Nowozin, J. Jancsary, and A. W. Fitzgibbon.  
“Joint Demosaicing and Denoising via Learned Nonparametric Random Fields”.  
In: *IEEE Transactions on Image Processing (TIP)*.  
2014.
- [19] M. Nokhbeh-Zaeem, D. Khashabi, H. A. Talebi, S. Navabi, and F. Vaziri.  
“Adaptive tiled Neural Networks”.  
In: *IEEE International Conference on Systems, Man, and Cybernetics (SMC)*.  
2011.

### Peer-reviewed Workshop Proceedings

- [20] P. Kordjamshidi, S. Singh, D. Khashabi, C. Christodoulopoulos, M. Sammons, S. Sinha, and D. Roth.  
“Relational Learning and Feature Extraction by Querying over Heterogeneous Information Networks”.  
In: *Seventh International Workshop on Statistical Relational AI (StarAI)*.  
2017.
- [21] Z. Fei, D. Khashabi, H. Peng, H. Wu, and D. Roth.  
“Illinois-Profiler: Knowledge Schemas at Scale”.  
In: *Workshop on Cognitive Knowledge Acquisition and Applications (Cognitum)*.  
2015.

### Patents

- [22] R. S. B. Nowozin, D. Khashabi, J. M. Jancsary, B. J. Lindbloom, and A. W. Fitzgibbon.  
*Image demosaicing*.  
US Patent 9,344,690.  
May 2016.

## Mentorship

2017-2018	Angela Sun, Salaa Kohari, Zheng Tian, Senior Project: <i>CoLabel</i> , Univ. of Pennsylvania
2016-2017	Guanheng Luo, Project: <i>CogComp-NLPy</i> , University of Illinois, Urbana-Champaign
2014-2015	Josh Camp, Paul Gibbons, Ryan Kelch, Deepak Shine, Dhruv Vajpeyi, Project: <i>Open-Eval</i> (Senior Project), University of Illinois, Urbana-Champaign
2013-2014	Tianxiao Zhang, <i>Experiments on Recursive Neural Networks for Textual Entailment</i>

## Invited Talks

- “*In Pursuit of the Holy Grail of Natural Language Understanding: Past, Present and Future*”
  - The Third Workshop on Progress Towards the Holy Grail, Conference on Principles and Practice of Constraint Programming (CP), 2019.
- “*Natural Language Understanding with Indirect Supervision*”
  - University of Arizona, 2019.
  - University of Maryland - Baltimore County, 2019.
  - Carnegie Mellon University - Language Technologies Institute, 2019.
  - Allen Institute for Artificial Intelligence, 2019.
- “*Reasoning-Driven Question Answering*”
  - Georgetown NLP seminar, 2018.
  - Stanford NLP seminar, 2018.
  - Yale NLP seminar, 2018.
- “*Question Answering as Global Reasoning over Semantic Abstractions*”
  - New York University, NLP Seminar, 2018.
  - Mid-Atlantic Student Colloquium on Speech, Language and Learning, 2018.
- “*Question Answering via Integer Programming over Semi-Structured Knowledge*”
  - Midwest Speech and Language Days, TTIC, 2017.
  - Microsoft, Redmond, 2016.

## Teaching

*As a guest lecturer*

Fall 2018	<i>Machine Learning</i> - Instructor: Prof. Dan Roth
Spring 2018	<i>Machine Learning</i> - Instructor: Prof. Dan Roth
Spring, 2016	<i>Machine Learning</i> - Instructor: Prof. Dan Roth
Fall, 2015	<i>Machine Learning</i> - Instructor: Prof. Dan Roth

*As a teaching assistant*

Fall, 2015	<i>Machine Learning</i> - Instructor: Prof. Dan Roth
Spring, 2013	<i>Fundamental Algorithms</i> - Instructor: Prof. Jeff Erickson
Spring, 2012	<i>Fundamental Algorithms</i> - Instructor: Prof. Sarel Har-Peled, and Prof. Alexandra Kolla
Spring, 2012	<i>Digital Signal Processing</i> - Instructor: Prof. Hamid Sheikhzadeh Nadjar
Spring, 2012	<i>Probability and Statistics (I)</i> - Instructor: Prof. Gholamreza Moradi
Fall, 2011	<i>Foundations of Programming I (C++)</i> - Instructor: Prof. Bahram Taheri
Spring, 2011	<i>Foundations of Programming II (C++)</i> - Instructor: Prof. Bahram Taheri

## Community Involvement and Outreach

- *Co-Chair:*
  - 2019 Student Research Workshop, ACL.
- *Area Chair:*
  - 2019 ACL, EMNLP.
- *Senior Program Member:*
  - 2020 IJCAI-PRICAI.
  - 2019 IJCAI, NourIPS, AAAI.
- *Program Committee (PC):*
  - 2019 ACL, NAACL, AAAI, CoNLL.
  - 2018 NAACL, AAAI, COLING, LREC.
  - 2017 AAAI, CoNLL.
- *Technical Committee (TC):*
  - 2009 AUTCUP (2D Soccer Simulation League).
- *Student Volunteer:*
  - 2018 NAACL.
  - 2016 IJCAI.
- *Organizer:*
  - 2014–2016 Artificial Intelligence and Information Systems (AIIS) seminars at UIUC.
  - 2013–2015 AI reading group at UIUC.
- *Member:*
  - 2018–2019 Penn/Wharton Venture Initiation Program (VIP-C).
  - 2017–now Association for Computational Linguistics (ACL).
  - 2011–now *Student Member*, Institute of Electrical and Electronics Engineers (IEEE).
- *Volunteer:*
  - 2019–now International Rescue Committee (SeaTac WA): helping refugees on need basis.
  - 2017 Tech it Out Philly: teaching basics of web-design to public high-school students.