

Daniel Khashabi

University of Pennsylvania
Philadelphia, PA, USA 19104
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Cell: +1 (217) 979-3565
E-mail: danielkh@cis.upenn.edu
<http://www.cis.upenn.edu/~danielkh>

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-? *Young Investigator*, Allen Institute for Artificial Intelligence, WA.
- 2019 *Post-doctoral fellow*, University of Pennsylvania, PA
- 2017–2019 *Research Assistant*, University of Pennsylvania, 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, Iran

Publications

Peer-reviewed Publications

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

- [1] 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.
- [2] 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.
- [3] 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.
- [4] 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.
- [5] D. Khashabi et al.
“CogCompNLP: Your Swiss Army Knife for NLP”.
In: *11th Language Resources and Evaluation Conference (LREC)*.
2018.
- [6] 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.
- [7] 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.
- [8] 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.
- [9] 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.
- [10] 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.
- [11] 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.
- [12] K. Quanrud and D. Khashabi.
“Online Learning with Adversarial Delays”.

- In: *Proceedings of the 28th International Conference on Neural Information Processing Systems (NeurIPS)*. 2015.
- [13] 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.
- [14] 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.
- [15] 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

- [16] 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.
- [17] 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.

Technical reports/Pre-prints

- [18] D. Khashabi.
Knowledge Representation: How far we have come?
Tech. rep.
University of Illinois, Urbana-Champaign, 2015.
- [19] D. Khashabi, J. Y. Liu, J. Wieting, and F. Liang.
Clustering With Side Information: From a Probabilistic Model to a Deterministic Algorithm.
Tech. rep.
2015.
- [20] D. Khashabi.
On the Recursive Neural Networks for Relation Extraction and Entity Recognition.
Tech. rep.
2013.

Patents

- [21] 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.

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>

Mentorship

Invited Talks

- “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 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 teaching assistant

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

Select Software Contributions

- **CogCompNLP**, Co-author: Extensive suite of state-of-the-art NLP annotators.
Code: <https://github.com/CogComp/cogcomp-nlp>.

Community Involvement and Outreach

- *Co-Chair*, Student Research Workshop, ACL (2019).
- *Area Chair*, ACL (2019), EMNLP (2019).
- *Senior Program Member*, IJCAI (2019), NourIPS (2019).
- *Program Committee (PC)*, ACL (2019), NAACL (2018, 2019), AAAI (2018, 2019), AAAI(demos) (2017, 2018), CoNLL (2017, 2019), COLING (2018), LREC (2018), NAACL-SRW (2019).
- *Reviewer*, CoNLL (2016), NourIPS (2016, 2019), ECML-PKDD (2018).
- *Technical Committee (TC) member*, AUTCUP 2009, 2D Soccer Simulation.
- *Student Volunteer*, IJCAI (2016), NAACL (2018).
- *Volunteer Mentor*, Tech it Out Philly (<http://techitoutphilly.com>), teaching basics of web-design to Philadelphia public high-school students, 2017.
- *Organizer*,
 - Artificial Intelligence and Information Systems (AIIS) seminars at UIUC, 2014–2016.
 - AI reading group at UIUC, 2013–2015.
- *Member*,
 - Penn/Wharton Venture Initiation Program (VIP-C), 2018-2019.
 - Association for Computational Linguistics (ACL), 2017-now.
 - *Student Member*, Institute of Electrical and Electronics Engineers (IEEE), 2011-now.