

Yonatan Bisk

*Natural Language Processing
Computer Science*

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Positions

- Now **Postdoctoral Scholar**, *University of Washington & Allen Institute for Artificial Intelligence*
Advisor: Yejin Choi
- Postdoctoral Scholar**, *Information Sciences Institute, University of Southern California*
Advisor: Daniel Marcu

Education

- 2015 **PhD in Computer Science**, *The University of Illinois at Urbana-Champaign*,
Thesis: **Unsupervised Grammar Induction with Combinatory Categorical Grammars**
Advisor: Julia Hockenmaier
Committee: Jason Eisner, Dan Roth, ChengXiang Zhai
- 2009 **BS in Computer Science**, *The University of Texas at Austin*, Turing Scholar,
Thesis: The Necessity of Separating Control and Logic When Grounding Language using Neuroevolution
Advisor: Risto Miikkulainen Second Reader: Raymond Mooney

Conference and Journal Publications

- 2019 **From Recognition to Cognition: Visual Commonsense Reasoning**
Rowan Zellers, [Yonatan Bisk](#), Ali Farhadi and Yejin Choi,
The IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Oral
- **Tactical Rewind: Self-Correction via Backtracking in Vision-and-Language Navigation**
Liyiming Ke, Xiujuan Li, [Yonatan Bisk](#), Ari Holtzman, Zhe Gan, Jingjing Liu, Jianfeng Gao, Yejin Choi and Siddhartha Srinivasa,
The IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Oral
 - **Prospection: Interpretable Plans From Language By Predicting the Future**
Chris Paxton, [Yonatan Bisk](#), Jesse Thomason, Arunkumar Byravan, and Dieter Fox,
International Conference on Robotics and Automation (ICRA)
 - **Shifting the Baseline: Single Modality Performance on Visual Navigation & QA**
Jesse Thomason, Daniel Gordon, and [Yonatan Bisk](#),
Proc of the 2019 Conference of the N. American Chapter of the Association for Computational Linguistics
 - **Benchmarking Hierarchical Script Knowledge**
[Yonatan Bisk](#), Jan Buys, Karl Pichotta, and Yejin Choi,
Proc of the 2019 Conference of the N. American Chapter of the Association for Computational Linguistics
- 2018 **SWAG: A Large-Scale Adversarial Dataset for Grounded Commonsense Inference**
Rowan Zellers, [Yonatan Bisk](#), Roy Schwartz and Yejin Choi,
Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing (EMNLP), Oral
- **Synthetic and Natural Noise Both Break Neural Machine Translation**
Yonatan Belinkov and [Yonatan Bisk](#),
Proceedings of the 6th International Conference on Learning Representations (ICLR), Oral
 - **Learning Interpretable Spatial Operations in a Rich 3D Blocks World**
[Yonatan Bisk](#), Kevin Shih, Yejin Choi and Daniel Marcu,
Proceedings of the Thirty-Second Conference on Artificial Intelligence (AAAI-18)
- 2017 **Natural Language Inference from Multiple Premises**
Alice Lai, [Yonatan Bisk](#), and Julia Hockenmaier,
Proceedings of the Eighth International Joint Conference on Natural Language Processing, Oral
- 2016 **Evaluating Induced CCG Parsers on Grounded Semantic Parsing**
[Yonatan Bisk](#), Siva Reddy, John Blitzer, Julia Hockenmaier and Mark Steedman,
Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing, pp 2022 – 2027

- **Natural Language Communication with Robots**
Yonatan Bisk, Deniz Yuret and Daniel Marcu,
Proceedings of the 2016 Conference of the North American Chapter of the Association for Computational Linguistics, pp 751 – 761, Oral
- **Supertagging With LSTMs**
Ashish Vaswani, Yonatan Bisk, Kenji Sagae and Ryan Musa,
Proceedings of the 2016 Conference of the North American Chapter of the Association for Computational Linguistics, pp 232–237, Oral
- 2015 **Probing the Linguistic Strengths and Limitations of Unsupervised Grammar Induction**
Yonatan Bisk and Julia Hockenmaier,
Proc of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 1: Long Papers), pp 1395 – 1404, Oral
- **Labeled Grammar Induction with Minimal Supervision**
Yonatan Bisk, Christos Christodoulopoulos and Julia Hockenmaier,
Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 2: Short Papers), pp 870 – 876
- 2013 **An HDP Model for Inducing Combinatory Categorical Grammars**
Yonatan Bisk and Julia Hockenmaier,
Transactions of the Association for Computational Linguistics, Vol 1, pp 75-88
- 2012 **Simple Robust Grammar Induction with Combinatory Categorical Grammars**
Yonatan Bisk and Julia Hockenmaier,
Proceedings of the Twenty-Sixth Conference on Artificial Intelligence (AAAI-12), pp 1643–1649
- **Document-Topic Hierarchies from Document Graphs**
Tim Weninger, Yonatan Bisk and Jiawei Han,
Proceedings of the 21st ACM International Conference on Information and Knowledge Management (CIKM)
- 2010 **Normal-form parsing for Combinatory Categorical Grammars with generalized composition and type-raising**
Julia Hockenmaier and Yonatan Bisk,
Proceedings of the 23rd International Conference on Computational Linguistics (Coling 2010), pp 465–473

Workshop Publications & Tech Reports

- 2018 **Inducing Grammars with and for Neural Machine Translation**
Ke Tran and Yonatan Bisk,
Workshop on Neural Machine Translation, Best paper - Oral
- **Bridging HMMs and RNNs Through Architectural Transformations**
Jan Buys, Yonatan Bisk, and Yejin Choi,
Interpretability and Robustness in Audio, Speech, and Language Workshop @ NeurIPS
- **CHALET: Cornell House Agent Learning Environment**
Claudia Yan, Dipendra Misra, Andrew Bennet, Aaron Walsman, Yonatan Bisk and Yoav Artzi,
ArXiv
- 2016 **Unsupervised Neural Hidden Markov Models**
Ke Tran, Yonatan Bisk, Ashish Vaswani, Daniel Marcu and Kevin Knight,
Proceedings of the Workshop on Structured Prediction for NLP, pp 63–71, Oral
- **Towards a Dataset for Human Computer Communication via Grounded Language Acquisition**
Yonatan Bisk, Daniel Marcu and William Wong,
Proceedings of the AAAI 2016 Workshop on Symbiotic Cognitive Systems, pp 729 – 732
- 2012 **Induction of Linguistic Structure with Combinatory Categorical Grammars**
Yonatan Bisk and Julia Hockenmaier,
NAACL HLT Workshop on Inducing Linguistic Structure, pp 90–95

Conference Organization / Area-Chair

- 2019 **Area Chair**, *Vision Robotics Multimodal Grounding and Speech*, Association for Computational Linguistics
- **Workshop Organizer**, *Workshop on Spatial Language Understanding and Grounded communication for Robotics*, North American Chapter of the Association for Computational Linguistics
- 2018 **Conference Organizer**, *Social Media Chair*, North American Chapter of the Association for Computational Linguistics

- **Area Chair**, International Conference on Computational Linguistics
 - **Workshop Organizer**, *Generalization in the Age of Deep Learning*, North American Chapter of the Association for Computational Linguistics
 - **Workshop Organizer**, *Wordplay: Reinforcement and Language Learning in Text-Based Games*, NeurIPS
- 2017 **Conference Organizer**, *Student Scholarship Chair and Student Volunteer Coordinator*, Conference on Empirical Methods in Natural Language Processing
- **Workshop Organizer**, *Language Grounding for Robotics*, Conference of the Association for Computational Linguistics
- 2016 **Area-Chair**, *Semantic Parsing and Semantic Role Labeling*, Conference on Lexical and Computational Semantics (*SEM)

Reviewer

IEEE Robotics and Automation Letters (RA-L) ,	2019
International Joint Conference on Artificial Intelligence (IJCAI) ,	2019
International Conference on Machine Learning (ICML) ,	2019
International Conference on Learning Representations (ICLR) ,	2019
International Conference on Robotics and Automation (ICRA) ,	2019
Neural Information Processing Systems (NeurIPS) ,	2018
Association for the Advancement of Artificial Intelligence (AAAI) ,	2018
International Journal of Robotics Research (IJRR) ,	2017
Computational Linguistics Journal (CL) ,	2017
Association for Computational Linguistics (ACL) ,	2017, 2018
International Joint Conference on Natural Language Processing (IJCNLP) ,	2017
Natural Language Engineering Journal ,	2016
Empirical Methods in Natural Language Processing (EMNLP) ,	2013 – 2018
European Chapter of the Association for Computational Linguistics ,	2014, 2017
N. American Chapter of the Association for Computational Ling (NAACL) ,	2016 – 2019
Conference on Computational Natural Language Learning (CoNLL) ,	2016 – 2018
International Conference on Computational Linguistics (Coling) ,	2016
NAACL Student Research Workshop ,	2013, 2015, 2018
EACL Student Research Workshop ,	2017
Spatial Language Understanding (SpLU) Workshop ,	2018
Workshop on Ethics in NLP ,	2017, 2018
AAAI Symp. on Natural Communication for Human-Robot Collaboration ,	2017
PC Member 2012 Vol 1. & PC Co-Chair 2013, 2015 Vol 2./Vol 3., @TinyToCS , Papers describing significant research contributions to CS in 140 characters or less	

Diversity and Inclusion

- 2018 **ACM Council on Diversity & Inclusion**, Investigating and initiating institutional change within ACM on behalf of underrepresented groups., 1yr
- **Grace Hopper PC member**, Review submissions to AI Technical Track, 1yr
- 2016 **NCWIT Collegiate Award**, Review applications for the National Center for Women & Information Technology's Collegiate Award honoring college women, ISI Ongoing
- 2009 **NCWIT Aspirations in Computing**, Review applications for the National Center for Women & Information Technology's Award for Aspirations in Computing which supports high-school girls interested in CS, UIUC, ISI Ongoing
- **Tech Junket/Women in CS**, CS outreach (presentations and recruitment) for local Urbana-Champaign pre-college students, UIUC 2yrs
- 2008 **Freshman Research Mentor**, Mentored students to perform research, UTexas 1yr

- **First Bytes**, Helped organize a summer camp for girls interested in CS, UTexas 1yr
- **Co-Founded Breakfast Bytes**, Professor talks for pre-college students, UTexas 1yr
- **CS Roadshow**, CS presentations at Austin middle and high schools, UTexas 1yr

Invitations and Talks

- 2018 **Colloquium Talk**, *Northwest NLP*
- 2017 **Invited Talk**, *University of Notre Dame NLP Seminar*
- Invited Talk**, *University of California, Irvine AI/ML Seminar*
- Invited Talk**, *Pacific Northwest National Laboratory*
- 2016 **Invited Poster**, *The Impact of Computing in Our Physical World session of the CRA's Computing Community Consortium (CCC) Symposium on Computing Research*
- 2015 **Colloquium Talk**, *Toyota Tech. Inst. of Chicago's Midwest Speech & Language Days*
- 2013 **Colloquium Talk**, *Toyota Tech. Inst. of Chicago's Midwest Speech & Language Days*

Community Service

- 2017 **Association for Computing Machinery Future of Computing Academy Member**,
 "... a platform that enables the next generation of researchers, ... to develop a coherent and influential voice that addresses challenging issues facing the field and society in general", Ongoing
- **NSF review panel**,
 Scholarships in the Division of Undergraduate Education
- **Intel International Science and Engineering Fair**,
 Pre-college science competition for the Assoc. for the Advancement of Artificial Intelligence (AAAI)

University Service

- 2017 **RoboNLP Reading Groups**,
 Reading group for students across robotics and NLP to learn and collaborate. 2yrs
- **Organize UW NLP Seminar**,
 Coordinate with professors to invite and host speakers to the department 2yrs
- 2015 **USC Postdoc Association Representative**, 1yr
- 2013 **Fellowships, Assistantships, and Admissions Committee**,
 Decide which students are admitted to the CS PhD and MS programs 1yr
- **Departmental Graduate Academic Council**, Vet departmental seminars and policies in addition to creating new useful resources and seminars for students 1yr
- **Departmental Grievance Committee**,
 Evaluate validity of complaints filed by students against professors 2yrs
- 2011 **Engineering Graduate Student Advisory Committee**,
 Advise the engineering dean on graduate matters and organize events for students 1yr
- 2010 **Organize Artificial Intelligence & Information Systems Seminar**,
 Coordinate with professors to invite and host speakers to the department 5yrs
- 2009 **PhD Ambassador & Mentor**, Introduce students to the department and graduate school both during visits and adjustment to the department upon entry 4yrs

Awards, Honors, and Fellowships

- 2018 **Finalist, UW Postdoc Mentoring Award**, University of Washington
- 2014 **Andrew and Shana Laursen Fellow**, University of Illinois
- 2013 **State Farm Companies Foundation Doctoral Scholarship**, University of Illinois
- 2013 **Graduate Student Outstanding Ambassador Award**, University of Illinois
- 2012 **Cognitive Science / Artificial Intelligence Award**, *Beckman Institute*
- 2011 **Honorable Mention for NSF Graduate Research Fellowship Program**
- 2009 **Honorable Mention for NSF Graduate Research Fellowship Program**

- 2008 **College of Natural Science Summer Research Fellowship**, UTexas
2007 **Departmental Summer Research Fellowship**, UTexas

Teaching

- 2014 **Teaching Assistant**, Graduate Machine Learning in NLP (# Students: 27), UIUC
2011 **Teaching Assistant**, Artificial Intelligence (# Students: 97), UIUC
2010 **Teaching Assistant**, Artificial Intelligence (# Students: 63), UIUC

Industry Employment

- 2014 **NLP Research Intern**, *Google, Inc.*, Mountain View, CA
Informing grammar induction with semantics under John Blitzer
2013 **NLP Research Intern**, *Google, Inc.*, Mountain View, CA
Leveraged syntactic information in question answering with John Blitzer
2009 **iPhone Development Intern**, *Apple, Inc.*, Cupertino, CA
Create robust metrics for evaluating keyboard and auto-correction performance
2006 **SQL Server Intern**, *Microsoft Corporation*, Redmond, WA
Created data-mining ribbon for Excel 2007 and UI test cases for SQL server

References

Yejin Choi,

*Associate Prof at the University of Washington and
Senior Research Manager at the Allen Instit for AI,*

yejin@cs.washington.edu

Dieter Fox,

*Professor at the University of Washington and
Senior Director of Robotics Research at Nvidia,*

fox@cs.washington.edu

Julia Hockenmaier,

Associate Prof at the University of Illinois at Urbana-Champaign,

juliahmr@illinois.edu

Kevin Knight,

*Prof at the University of Southern California
Chief Scientist for NLP at Didi Chuxing,*

kevin.crawford.knight@gmail.com