

# 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 Bennett, 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

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
- **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 in May 2017 for the Association 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](mailto:yejin@cs.washington.edu)

### Dieter Fox,

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

[fox@cs.washington.edu](mailto:fox@cs.washington.edu)

### Julia Hockenmaier,

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

[juliahmr@illinois.edu](mailto:juliahmr@illinois.edu)

### Kevin Knight,

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

[kevin.crawford.knight@gmail.com](mailto:kevin.crawford.knight@gmail.com)