

# 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 **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

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

## 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,*

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