

# Yonatan Bisk

Assistant Professor of Computer Science

GHC 6703

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he/him

## Positions

- 2020 – **Assistant Professor** *Carnegie Mellon University*  
Language Technologies Institute  
Robotics Institute (courtesy)
- 2022 – **Visiting Professor** *Meta Fundamental AI Research (FAIR)* w/ Dhruv Batra
- 2021 – **Consulting Professor** *Microsoft Research*
- 2019 – **Visiting Researcher** *Microsoft Research* w/ Jianfeng Gao
- 2017 – **Postdoctoral Scholar**  
University of Washington & Allen Institute for Artificial Intelligence w/ Yejin Choi
- 2015 – **Postdoctoral Scholar**  
Information Sciences Institute, University of Southern California w/ 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

## PhD Students

PhD	<b>Hao Zhu</b>	he/him	<i>Theory of Mind</i>	(co-G Neubig)	LTI	2019 –
PhD	<b>Jared Fernandez</b>	he/him	<i>Efficiency</i>	(co-E Strubell)	LTI	2020 –
PhD	<b>Vidhi Jain</b>	she/her	<i>Language to Control</i>		RI	2021 –
PhD	<b>Tiffany Min</b>	she/her	<i>Embodiment</i>	(co-R Salakhutdinov)	MLD	2021 –
PhD	<b>Yingshan Chang</b>	she/her	<i>Multimodal Reasoning</i>		LTI	2022 –

## Professional Masters Students

MRSD	<b>Assistive Robotics for Eldercare (*co-Z Erickson)</b>					2023
	Abhinav Gupta	he/him	Atharva Pusalkar	he/him		
	Praveen Venkatesh	he/him	Shaolin Kataria	he/him		
	Shivam Tripathy	he/him				

## Alumni, Interns, and Undergraduates

MLT	<b>Jimin Sun</b>	she/her	<i>Embodied Dialogue</i>		LTI	2022 – 2023
Ugrad	<b>Xiang Fan</b>		<i>Transformer Efficiency</i>	(co-E Strubell)		2022
Intern	<b>Andy Liu</b>		<i>Theory-of-Mind</i>	(co-G Neubig)		2022
Intern	<b>Deogratias Amani</b>	he/him	<i>Grounding</i>			2022
MRSD	<b>Modular Teleop with Autonomy (*co-Z Erickson)</b>					2022
	Jashkumar Diyora	he/him	Shruti Gangopadhyay	she/her		
	Jigar Patel	he/him	Prakhar Pradeep	he/him		
	Shivani Sivakumar	she/her				

MCDS	<b>Embodied Navigation and Interaction</b>				2022
	<a href="#">Adhokshaja Madhwaraj</a>	he/him	<a href="#">Kushagra Mahajan</a>	he/him	
	<a href="#">Sai Vishwas Padigi</a>	he/him	<a href="#">Vineeth Reddy</a>	he/him	
	<a href="#">Malaika Vijay</a>	she/her	<a href="#">Zheng (Jessica) Zhong</a>	she/her	
MCDS	<b>Embodied Dialogue and ToM</b>				2022
	<a href="#">Xinyue Chen</a>	she/her	<a href="#">Nikhil Gupta</a>	he/him	
	<a href="#">Benny Jiang</a>	he/him	<a href="#">Shubham Phal</a>	he/him	
	<a href="#">Prasoon Varshney</a>	he/him			
MCDS	<b>Novel Concept Learning</b>				2022
	<a href="#">Bharani Ujjaini Kempaiah</a>	she/her	<a href="#">Linyi Li</a>	she/her	
MSAI	<b>Visual Patent Search</b>				2022
	<a href="#">Suchong Dong</a>	she/her	<a href="#">Zhiyuan Guo</a>	he/him	
	<a href="#">Mansi Goyal</a>	she/her	<a href="#">Marta Mendez Simon</a>	she/her	
	<a href="#">Sreenidhi Sundaram</a>	she/her	<a href="#">Leon Van Den Berghe</a>	he/him	
MLT	<a href="#">Yingshan Chang</a>	she/her	<i>Multimodal Reasoning</i>	LTI	2020 – 2022
MLT	<a href="#">Josh Zhanson</a>	he/him	<i>Embodied Visual Reps</i>	LTI	2020 – 2022
MS	<a href="#">Xiaoyu (Erin) Zhang</a>	she/her	<i>Collaborative Robots</i> (co-O Kroemer)	5th	2021 – 2022
Ugrad	<a href="#">Feiyu (Gavin) Zhu</a>		<i>Video Summarization</i> (co-C Paxton)		2021
Intern	<a href="#">Melanie Sclar</a>		<i>Symmetric Theory-of-Mind</i> (co-G Neubig)		2021
Intern	<a href="#">Blessing Bassey</a>		<i>TextVQA</i>		2021

## Journal Publications

- Training Vision-Language Transformers from Captions** 2023  
Liangke Gui, Yingshan Chang, Qiuyuan Huang, Subhojit Som, Alex Hauptmann, Jianfeng Gao, [Yonatan Bisk](#)  
*Transactions on Machine Learning Research*
- The Return of Lexical Dependencies: Neural Lexicalized PCFGs** 2020  
Hao Zhu, [Yonatan Bisk](#), Graham Neubig  
*Transactions of the Association for Computational Linguistics*
- An HDP Model for Inducing Combinatory Categorical Grammars** 2013  
[Yonatan Bisk](#), Julia Hockenmaier  
*Transactions of the Association for Computational Linguistics*

## Conference Publications

- Spatial-Language Attention Policies for Efficient Robot Learning** 2023  
Priyam Parashar, Vidhi Jain, Xiaohan Zhang, Jay Vakil, Sam Powers, [Yonatan Bisk](#), Chris Paxton  
*Conference on Robot Learning*
- SPAE: Semantic Pyramid AutoEncoder for Multimodal Generation with Frozen LLMs** 2023  
Lijun Yu, Yong Cheng, Zhiruo Wang, Vivek Kumar, Wolfgang Macherey, Yanping Huang, David A. Ross, Irfan Essa, [Yonatan Bisk](#), Ming-Hsuan Yang, Kevin Murphy, Alexander G. Hauptmann, Lu Jiang  
*Thirty-seventh Conference on Neural Information Processing Systems*
- HomeRobot: Open-Vocabulary Mobile Manipulation** 2023  
Sriram Yenamandra, Arun Ramachandran, Karmesh Yadav, Austin Wang, Mukul Khanna, Theophile Gervet, Tsung-Yen Yang, Vidhi Jain, Alexander William Clegg, John Turner, Zsolt Kira, Manolis Savva, Angel Chang, Devendra Singh Chaplot, Dhruv Batra, Roozbeh Mottaghi, [Yonatan Bisk](#), Chris Paxton  
*Conference on Robot Learning*
- SPRING: GPT-4 Out-performs RL Algorithms by Studying Papers and Reasoning** 2023  
Yue Wu, Shrimai Prabhumoye, So Yeon Min, [Yonatan Bisk](#), Ruslan Salakhutdinov, Amos Azaria, Tom Mitchell, Yuanzhi Li  
*Thirty-seventh Conference on Neural Information Processing Systems*

8. **HomeRobot Open Vocab Mobile Manipulation Challenge** 2023  
Sriram Yenamandra, Arun Ramachandran, Mukul Khanna, Karmesh Yadav, Devendra Singh Chaplot, Gunjan Chhablani, Alexander Clegg, Theophile Gervet, Vidhi Jain, Ruslan Partsey, Ram Ramrakhya, Andrew Szot, Tsung-Yen Yang, Aaron Edsinger, Charlie Kemp, Binit Shah, Zsolt Kira, Dhruv Batra, Roozbeh Mottaghi, [Yonatan Bisk](#), Chris Paxton  
*Thirty-seventh Conference on Neural Information Processing Systems: Competition Track*
9. **EXCALIBUR: Encouraging and Evaluating Embodied Exploration** 2023  
Hao Zhu, Raghav Kapoor, So Yeon Min, Winson Han, Jiatai Li, Kaiwen Geng, Graham Neubig, [Yonatan Bisk](#), Aniruddha Kembhavi, Luca Weihs  
*Conference on Computer Vision and Pattern Recognition*
10. **The Framework Tax: Disparities Between Inference Efficiency in Research and Deployment** 2023  
Jared Fernandez, Jacob Kahn, Clara Na, [Yonatan Bisk](#), Emma Strubell  
*The 2023 Conference on Empirical Methods in Natural Language Processing*
11. **Computational Language Acquisition with Theory of Mind** 2023  
Andy Liu, Hao Zhu, Emmy Liu, [Yonatan Bisk](#), Graham Neubig  
*The Eleventh International Conference on Learning Representations*
12. **Self-Supervised Object Goal Navigation with In-Situ Finetuning** 2023  
So Yeon Min, Yao-Hung Hubert Tsai, Wei Ding, Ali Farhadi, Ruslan Salakhutdinov, [Yonatan Bisk](#), Jian Zhang  
*IEEE/RSJ International Conference on Intelligent Robots and Systems*
13. **Don't Copy the Teacher: Data and Model Challenges in Embodied Dialogue** 2022  
So Yeon Min, Hao Zhu, Ruslan Salakhutdinov, [Yonatan Bisk](#)  
*Conference on Empirical Methods in Natural Language Processing*
14. **EvEntS RealLM: Event Reasoning of Entity States via Language Models** 2022  
Evangelia Spiliopoulou, Artidoro Pagnoni, [Yonatan Bisk](#), Eduard Hovy  
*Conference on Empirical Methods in Natural Language Processing*
15. **On Advances in Text Generation from Images Beyond Captioning: A Case Study in Self-Rationalization** 2022  
Shruti Palaskar, Akshita Bhagia, [Yonatan Bisk](#), Florian Metze, Alan W Black, Ana Marasovic  
*Findings of the Conference on Empirical Methods in Natural Language Processing*
16. **Transformers are Adaptable Task Planners** 2022  
Vidhi Jain, Yixin Lin, Eric Undersander, [Yonatan Bisk](#), Akshara Rai  
*Conference on Robot Learning*
17. **Symmetric Machine Theory of Mind** 2022  
Melanie Sclar, Graham Neubig, [Yonatan Bisk](#)  
*39th International Conference on Machine Learning*
18. **A Framework for Learning to Request Rich and Contextually Useful Information from Humans** 2022  
Khanh Nguyen, [Yonatan Bisk](#), Hal Daume III  
*39th International Conference on Machine Learning*
19. **Simulated Language Learning from Communicative Goals and Linguistic Input** 2022  
Hao Zhu, [Yonatan Bisk](#), Graham Neubig  
*Annual Meeting of the Cognitive Science Society (Oral)*
20. **HEAR 2021: Holistic Evaluation of Audio Representations** 2022  
Joseph Turian, Jordie Shier, Humair Raj Khan, Bhiksha Raj, Björn W. Schuller, Christian J. Steinmetz, Colin Malloy, George Tzanetakis, Gissel Velarde, Kirk McNally, Max Henry, Nicolas Pinto, Camille Noufi, Christian Clough, Dorien Herremans, Eduardo Fonseca, Jesse Engel, Justin Salamon, Philippe Esling, Pranay Manocha, Shinji Watanabe, Zeyu Jin, [Yonatan Bisk](#)  
*Proceedings of Machine Learning Research (PMLR): NeurIPS 2021 Competition Track*
21. **KAT: A Knowledge Augmented Transformer for Vision-and-Language** 2022  
Liangke Gui, Borui Wang, Qiuyuan Huang, Alex Hauptmann, [Yonatan Bisk](#), Jianfeng Gao  
*Annual Conference of the North American Chapter of the Association for Computational Linguistics (Oral)*
22. **FILM: Following Instructions in Language with Modular Methods** 2022  
So Yeon Min, Devendra Singh Chaplot, Pradeep Ravikumar, [Yonatan Bisk](#), Ruslan Salakhutdinov  
*The Tenth International Conference on Learning Representations*

23. **WebQA: Multihop and Multimodal QA** 2022  
Yingshan Chang, Mridu Narang, Hisami Suzuki, Guihong Cao, Jianfeng Gao, [Yonatan Bisk](#)  
*Conference on Computer Vision and Pattern Recognition (Oral)*
24. **Dependency Induction Through the Lens of Visual Perception** 2021  
Ruisi Su, Shruti Rijhwani, Hao Zhu, Junxian He, Xinyu Wang, [Yonatan Bisk](#), Graham Neubig  
*The SIGNLL Conference on Computational Natural Language Learning*
25. **Language Grounding with 3D Objects** 2021  
Jesse Thomason, Mohit Shridhar, [Yonatan Bisk](#), Chris Paxton, Luke Zettlemoyer  
*Conference on Robot Learning*
26. **TACo: Token-aware Cascade Contrastive Learning for Video-Text Alignment** 2021  
Jianwei Yang, [Yonatan Bisk](#), Jianfeng Gao  
*International Conference on Computer Vision*
27. **Few-shot Language Coordination by Modeling Theory of Mind** 2021  
Hao Zhu, Graham Neubig, [Yonatan Bisk](#)  
*The Thirty-eighth International Conference on Machine Learning*
28. **Grounding ‘Grounding’ in NLP** 2021  
Khyathi Raghavi Chandu, [Yonatan Bisk](#), Alan W Black  
*Findings of The 2021 Conference of the Association for Computational Linguistics*
29. **An Empirical Study on the Generalization Power of Neural Representations Learned via Visual Guessing Games** 2021  
Alessandro Suglia, [Yonatan Bisk](#), Ioannis Konstas, Antonio Vergari, Emanuele Bastianelli, Andrea Vanzo, Oliver Lemon  
*The 2021 Conference of the European Chapter of the Association for Computational Linguistics (Oral)*
30. **Knowledge-driven Data Construction for Zero-shot Evaluation in Commonsense Question Answering** 2021  
Kaixin Ma, Filip Ilievski, Jonathan Francis, [Yonatan Bisk](#), Eric Nyberg, Alessandro Oltramari  
*35th AAAI Conference on Artificial Intelligence*
31. **ALFWorld: Aligning Text and Embodied Environments for Interactive Learning** 2021  
Mohit Shridhar, Xingdi Yuan, Marc-Alexandre Côté, [Yonatan Bisk](#), Adam Trischler, Matthew Hausknecht  
*International Conference on Learning Representations*
32. **Imagining Grounded Conceptual Representations from Perceptual Information in Situated Guessing Games** 2020  
Alessandro Suglia, Antonio Vergari, Ioannis Konstas, [Yonatan Bisk](#), Emanuele Bastianelli, Andrea Vanzo, Oliver Lemon  
*The 28th International Conference on Computational Linguistics (Oral)*
33. **Experience Grounds Language** 2020  
[Yonatan Bisk](#), Ari Holtzman, Jesse Thomason, Jacob Andreas, Yoshua Bengio, Joyce Chai, Mirella Lapata, Angeliki Lazaridou, Jonathan May, Aleksandr Nisnevich, Nicolas Pinto, Joseph Turian  
*Conference on Empirical Methods in Natural Language Processing (EMNLP) (Oral)*
34. **RMM: A Recursive Mental Model for Dialog Navigation** 2020  
Homero Roman Roman, [Yonatan Bisk](#), Jesse Thomason, Asli Celikyilmaz, Jianfeng Gao  
*Conference on Empirical Methods in Natural Language Processing: Findings*
35. **ALFRED: A Benchmark for Interpreting Grounded Instructions for Everyday Tasks** 2020  
Mohit Shridhar, Jesse Thomason, Daniel Gordon, [Yonatan Bisk](#), Winson Han, Roozbeh Mottaghi, Luke Zettlemoyer, Dieter Fox  
*The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*
36. **PIQA: Reasoning about Physical Commonsense in Natural Language** 2020  
[Yonatan Bisk](#), Rowan Zellers, Ronan Le Bras, Jianfeng Gao, Yejin Choi  
*Thirty-Fourth AAAI Conference on Artificial Intelligence (Oral)*
37. **Robust Navigation with Language Pretraining and Stochastic Sampling** 2019  
Xiujun Li, Chunyuan Li, Qiaolin Xia, [Yonatan Bisk](#), Asli Celikyilmaz, Jianfeng Gao, Noah A. Smith, Yejin Choi  
*Conference on Empirical Methods in Natural Language Processing and 9th International Joint Conference on Natural Language Processing*

38. **Defending Against Neural Fake News** 2019  
Rowan Zellers, Ari Holtzman, Hannah Rashkin, [Yonatan Bisk](#), Ali Farhadi, Franziska Roesner, Yejin Choi  
*Thirty-third Conference on Neural Information Processing Systems*
39. **Improving Robot Success Detection using Static Object Data** 2019  
Rosario Scalise, Jesse Thomason, [Yonatan Bisk](#), Siddhartha Srinivasa  
*IEEE/RSJ International Conference on Intelligent Robots and Systems*
40. **Early Fusion for Goal Directed Robotic Vision** 2019  
Aaron Walsman, [Yonatan Bisk](#), Saadia Gabriel, Dipendra Misra, Yoav Artzi, Yejin Choi, Dieter Fox  
*2019 IEEE/RSJ International Conference on Intelligent Robots and Systems – RoboCup Best Paper Award finalist*
41. **HellaSwag: Can a Machine Really Finish Your Sentence?** 2019  
Rowan Zellers, Ari Holtzman, [Yonatan Bisk](#), Ali Farhadi, Yejin Choi  
*Association for Computational Linguistics*
42. **From Recognition to Cognition: Visual Commonsense Reasoning** 2019  
Rowan Zellers, [Yonatan Bisk](#), Ali Farhadi, Yejin Choi  
*The IEEE Conference on Computer Vision and Pattern Recognition (CVPR) (Oral)*
43. **Tactical Rewind: Self-Correction via Backtracking in Vision-and-Language Navigation** 2019  
Liyiming Ke, Xiujun Li, [Yonatan Bisk](#), Ari Holtzman, Zhe Gan, Jingjing Liu, Jianfeng Gao, Yejin Choi, Siddhartha Srinivasa  
*The IEEE Conference on Computer Vision and Pattern Recognition (CVPR) (Oral)*
44. **Prospection: Interpretable Plans From Language By Predicting the Future** 2019  
Chris Paxton, [Yonatan Bisk](#), Jesse Thomason, Arunkumar Byravan, Dieter Fox  
*International Conference on Robotics and Automation (ICRA)*
45. **Shifting the Baseline: Single Modality Performance on Visual Navigation & QA** 2019  
Jesse Thomason, Daniel Gordon, [Yonatan Bisk](#)  
*Annual Conference of the North American Chapter of the Association for Computational Linguistics*
46. **Benchmarking Hierarchical Script Knowledge** 2019  
[Yonatan Bisk](#), Jan Buys, Karl Pichotta, Yejin Choi  
*Annual Conference of the North American Chapter of the Association for Computational Linguistics (Oral)*
47. **Character-based Surprisal as a Model of Reading Difficulty in the Presence of Errors** 2019  
Michael Hahn, Frank Keller, [Yonatan Bisk](#), Yonatan Belinkov  
*The 41st Annual Meeting of the Cognitive Science Society (Oral)*
48. **SWAG: A Large-Scale Adversarial Dataset for Grounded Commonsense Inference** 2018  
Rowan Zellers, [Yonatan Bisk](#), Roy Schwartz, Yejin Choi  
*Conference on Empirical Methods in Natural Language Processing (EMNLP) (Oral)*
49. **Synthetic and Natural Noise Both Break Neural Machine Translation** 2018  
Yonatan Belinkov, [Yonatan Bisk](#)  
*6th International Conference on Learning Representations (Oral)*
50. **Learning Interpretable Spatial Operations in a Rich 3D Blocks World** 2018  
[Yonatan Bisk](#), Kevin Shih, Yejin Choi, Daniel Marcu  
*Thirty-Second Conference on Artificial Intelligence (AAAI-18)*
51. **Natural Language Inference from Multiple Premises** 2017  
Alice Lai, [Yonatan Bisk](#), Julia Hockenmaier  
*Eighth International Joint Conference on Natural Language Processing (Oral)*
52. **Natural Language Communication with Robots** 2016  
[Yonatan Bisk](#), Deniz Yuret, Daniel Marcu  
*15th Annual Conference of the North American Chapter of the Association for Computational Linguistics (Oral)*
53. **Supertagging with LSTMs** 2016  
Ashish Vaswani, [Yonatan Bisk](#), Kenji Sagae, Ryan Musa  
*15th Annual Conference of the North American Chapter of the Association for Computational Linguistics (Short Papers) (Oral)*

54. **Evaluating Induced CCG Parsers on Grounded Semantic Parsing** 2016  
Yonatan Bisk, Siva Reddy, John Blitzer, Julia Hockenmaier, Mark Steedman  
*2016 Conference on Empirical Methods in Natural Language Processing*
55. **Probing the Linguistic Strengths and Limitations of Unsupervised Grammar Induction** 2015  
Yonatan Bisk, Julia Hockenmaier  
*53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 1: Long Papers) (Oral)*
56. **Labeled Grammar Induction with Minimal Supervision** 2015  
Yonatan Bisk, Christos Christodoulopoulos, Julia Hockenmaier  
*53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 2: Short Papers)*
57. **Simple Robust Grammar Induction with Combinatory Categorical Grammar** 2012  
Yonatan Bisk, Julia Hockenmaier  
*Twenty-Sixth Conference on Artificial Intelligence (AAAI-12)*
58. **Document-Topic Hierarchies from Document Graphs** 2012  
Tim Weninger, Yonatan Bisk, Jiawei Han  
*21st ACM international conference on Information and knowledge management (CIKM 2012)*
59. **Normal-form parsing for CCGs with generalized composition and type-raising** 2010  
Julia Hockenmaier, Yonatan Bisk  
*23rd International Conference on Computational Linguistics (Coling 2010)*

## Workshop Publications

60. **MAEA: Multimodal Attribution for Embodied AI** 2022  
Vidhi Jain, Jayant Sravan Tamarapalli, Sahiti Yerramilli, Yonatan Bisk  
*Progress and Challenges in Building Trustworthy Embodied AI at NeurIPS 2022*
61. **Tackling AlfWorld with Action Attention and Common Sense from Language Models** 2022  
Yue Wu, So Yeon Min, Yonatan Bisk, Ruslan Salakhutdinov, Shrimai Prabhumoye  
*Language and Reinforcement Learning Workshop at NeurIPS 2022*
62. **Worst of Both Worlds: Biases Compound in Pre-trained Vision-and-Language Models** 2022  
Tejas Srinivasan, Yonatan Bisk  
*4th Workshop on Gender Bias in Natural Language Processing*
63. **KB-VLP: Knowledge Based Vision and Language Pretraining** 2021  
Kezhen Chen, Qiuyuan Huang, Yonatan Bisk, Daniel McDuff, Jianfeng Gao  
*ICML21 Workshop on Self-Supervised Learning*
64. **A Benchmark for Structured Procedural Knowledge Extraction from Cooking Videos** 2020  
Frank F. Xu, Lei Ji, Botian Shi, Junyi Du, Graham Neubig, Yonatan Bisk, Nan Duan  
*Workshop on NLP Beyond Text*
65. **Inducing Grammars with and for Neural Machine Translation** 2018  
Ke Tran, Yonatan Bisk  
*2nd Workshop on Neural Machine Translation*
66. **Bridging HMMs and RNNs through Architectural Transformations** 2018  
Jan Buys, Yonatan Bisk, Yejin Choi  
*32nd Conference on Neural Information Processing Systems (NIPS 2018), IRASL workshop*
67. **Towards a Dataset for Human Computer Communication via Grounded Language Acquisition** 2016  
Yonatan Bisk, Daniel Marcu, William Wong  
*AAAI 2016 Workshop on Symbiotic Cognitive Systems*
68. **Unsupervised Neural Hidden Markov Models** 2016  
Ke Tran, Yonatan Bisk, Ashish Vaswani, Daniel Marcu, Kevin Knight  
*Workshop on Structured Prediction for NLP (Oral)*



69. **Induction of Linguistic Structure with Combinatory Categorical Grammars** 2012  
Yonatan Bisk, Julia Hockenmaier  
*NAACL HLT Workshop on Induction of Linguistic Structure*

## Tech Reports

70. **Open X-Embodiment: Robotic Learning Datasets and RT-X Models** 2023  
 Open X-Embodiment Collaboration, Abhishek Padalkar, Acorn Pooley, Ajinkya Jain, Alex Bewley, Alex Herzog, Alex Irpan, Alexander Khazatsky, Anant Rai, Anikait Singh, Anthony Brohan, Antonin Raffin, Ayzaan Wahid, Ben Burgess-Limerick, Beomjoon Kim, Bernhard Schölkopf, Brian Ichter, Cewu Lu, Charles Xu, Chelsea Finn, Chenfeng Xu, Cheng Chi, Chenguang Huang, Christine Chan, Chuer Pan, Chuyuan Fu, Coline Devin, Danny Driess, Deepak Pathak, Dhruv Shah, Dieter Buechler, Dmitry Kalashnikov, Dorsa Sadigh, Edward Johns, Federico Ceola, Fei Xia, Freek Stulp, Gaoyue Zhou, Gaurav S. Sukhatme, Gautam Salhotra, Ge Yan, Giulio Schiavi, Hao Su, Hao-Shu Fang, Haochen Shi, Heni Ben Amor, Henrik I Christensen, Hiroki Furuta, Homer Walke, Hongjie Fang, Igor Mordatch, Ilija Radosavovic, Isabel Leal, Jacky Liang, Jaehyung Kim, Jan Schneider, Jasmine Hsu, Jeannette Bohg, Jeffrey Bingham, Jiajun Wu, Jialin Wu, Jianlan Luo, Jiayuan Gu, Jie Tan, Jihoon Oh, Jitendra Malik, Jonathan Tompson, Jonathan Yang, Joseph J. Lim, João Silvério, Junhyek Han, Kanishka Rao, Karl Pertsch, Karol Hausman, Keegan Go, Keerthana Gopalakrishnan, Ken Goldberg, Kendra Byrne, Kenneth Oslund, Kento Kawaharazuka, Kevin Zhang, Keyvan Majd, Krishan Rana, Krishnan Srinivasan, Lawrence Yunliang Chen, Lerrel Pinto, Liam Tan, Lionel Ott, Lisa Lee, Masayoshi Tomizuka, Maximilian Du, Michael Ahn, Mingtong Zhang, Mingyu Ding, Mohan Kumar Srirama, Mohit Sharma, Moo Jin Kim, Naoaki Kanazawa, Nicklas Hansen, Nicolas Heess, Nikhil J Joshi, Niko Suenderhauf, Norman Di Palo, Nur Muhammad Mahi Shafiullah, Oier Mees, Oliver Kroemer, Pannag R Sanketi, Paul Wohlhart, Peng Xu, Pierre Sermanet, Priya Sundaresan, Quan Vuong, Rafael Rafailov, Ran Tian, Ria Doshi, Roberto Martín-Martín, Russell Mendonca, Rutav Shah, Ryan Hoque, Ryan Julian, Samuel Bustamante, Sean Kirmani, Sergey Levine, Sherry Moore, Shikhar Bahl, Shivin Dass, Shuran Song, Sichun Xu, Siddhant Haldar, Simeon Adebola, Simon Guist, Soroush Nasiriany, Stefan Schaal, Stefan Welker, Stephen Tian, Sudeep Dasari, Suneel Belkhale, Takayuki Osa, Tatsuya Harada, Tatsuya Matsushima, Ted Xiao, Tianhe Yu, Tianli Ding, Todor Davchev, Tony Z. Zhao, Travis Armstrong, Trevor Darrell, Vidhi Jain, Vincent Vanhoucke, Wei Zhan, Wenxuan Zhou, Wolfram Burgard, Xi Chen, Xiaolong Wang, Xinghao Zhu, Xuanlin Li, Yao Lu, Yevgen Chebotar, Yifan Zhou, Yifeng Zhu, Ying Xu, Yixuan Wang, Yonatan Bisk, Yoonyoung Cho, Youngwoon Lee, Yuchen Cui, Yueh-hua Wu, Yujin Tang, Yuke Zhu, Yunzhu Li, Yusuke Iwasawa, Yutaka Matsuo, Zhuo Xu, Zichen Jeff Cui  
<https://robotics-transformer-x.github.io>
71. **Reasoning about the Unseen for Efficient Outdoor Object Navigation** 2023  
 Quanting Xie, Tianyi Zhang, Kedi Xu, Matthew Johnson-Roberson, Yonatan Bisk  
*ArXiv*
72. **MOSAIC: Learning Unified Multi-Sensory Object Property Representations for Robot Perception** 2023  
 Gyan Tatiya, Jonathan Francis, Ho-Hsiang Wu, Yonatan Bisk, Jivko Sinapov  
*ArXiv*
73. **WebArena: A Realistic Web Environment for Building Autonomous Agents** 2023  
 Shuyan Zhou, Frank F. Xu, Hao Zhu, Xuhui Zhou, Robert Lo, Abishek Sridhar, Xianyi Cheng, Yonatan Bisk, Daniel Fried, Uri Alon, Graham Neubig  
*ArXiv*
74. **Plan, Eliminate, and Track – Language Models are Good Teachers for Embodied Agents** 2023  
 Yue Wu, So Yeon Min, Yonatan Bisk, Ruslan Salakhutdinov, Amos Azaria, Yuanzhi Li, Tom Mitchell, Shrimai Prabhumoye  
*ArXiv*

75. **Retrospectives on the Embodied AI Workshop** 2022  
 Matt Deitke, Dhruv Batra, [Yonatan Bisk](#), Tommaso Campari, Angel X. Chang, Devendra Singh Chaplot, Changan Chen, Claudia Pérez D'Arpino, Kiana Ehsani, Ali Farhadi, Li Fei-Fei, Anthony Francis, Chuang Gan, Kristen Grauman, David Hall, Winson Han, Unnat Jain, Aniruddha Kembhavi, Jacob Krantz, Stefan Lee, Chengshu Li, Sagnik Majumder, Oleksandr Maksymets, Roberto Martín-Martín, Roozbeh Mottaghi, Sonia Raychaudhuri, Mike Roberts, Silvio Savarese, Manolis Savva, Mohit Shridhar, Niko Sünderhauf, Andrew Szot, Ben Talbot, Joshua B. Tenenbaum, Jesse Thomason, Alexander Toshev, Joanne Truong, Luca Weihs, Jiajun Wu  
[ArXiv](#)
76. **Multi-View Learning for Vision-and-Language Navigation** 2020  
 Qiaolin Xia, Xiujuan Li, Chunyuan Li, [Yonatan Bisk](#), Zhifang Sui, Jianfeng Gao, Yejin Choi, Noah A. Smith  
[ArXiv](#)
77. **FIND: Identifying Functionally and Structurally Important Features in Protein Sequences with Deep Neural Networks** 2019  
 Ranjani Murali, James Hemp, Victoria Orphan, [Yonatan Bisk](#)  
[bioRxiv](#)
78. **CHALET: Cornell House Agent Learning Environment** 2018  
 Claudia Yan, Dipendra Misra, Andrew Bennett, Aaron Walsman, [Yonatan Bisk](#), Yoav Artzi  
[ArXiv Preprint 1801.07357](#)
79. **Unsupervised Grammar Induction with Combinatory Categorical Grammars** 2015  
[Yonatan Bisk](#)  
[University of Illinois at Urbana-Champaign](#)

## Thesis Committees

- **PhD** [Lijun Yu](#) Alex Hauptmann, CMU
- **PhD** [Liangke Gui](#) Alex Hauptmann, CMU
- 2023 **MSR** [Mateo Guaman Castro](#) Sebastian Scherer, CMU
- 2023 **PhD** [Kaixin Ma](#) Eric Nyberg, CMU
- 2023 **PhD** [Nicholas Botzer](#) Tim Weninger, Notre Dame
- 2023 **PhD** [Naoki Otani](#) Ed Hovy, CMU
- 2023 **PhD** [Dylan Ebert](#) Ellie Pavlick, Brown
- 2022 **PhD** [Shikib Mehri](#) Maxine Eskenazi, CMU
- 2022 **PhD** [Shruti Palaskar](#) Alan Black and Florian Metze, CMU
- 2022 **PhD** [Evangelia Spiliopoulou](#) Ed Hovy, CMU
- 2022 **PhD** [Dheeraj Rajagopal](#) Ed Hovy, CMU
- 2022 **PhD** [Volkan Cirik](#) Louis-Philippe Morency and Taylor Berg-Kirkpatrick, CMU
- 2022 **MLT** [Aishwarya Jadhav](#) Katia Sycara, CMU
- 2021 **PhD** [Pengcheng Yin](#) Graham Neubig, CMU
- 2020 **PhD** [Zihang Dai](#) Yiming Yang, CMU
- 2021 **MLT** [Jing Wen](#) Katerina Fragkiadaki, CMU
- 2021 **Qual** [Mohit Sharma](#) Oliver Kroemer, CMU

## Teaching

- 2023 **11-851 Talking to Robots** # Students: 16, FA
- 11-767 On-Device Machine Learning** Co-Emma Strubell # Students: 69, FA
- 11-777 MultiModal Machine Learning** Co-Daniel Fried # Students: 107, SP
- 2022 **11-767 On-Device Machine Learning** Co-Emma Strubell # Students: 42, FA
- 11-777 MultiModal Machine Learning** # Students: 94, SP
- 2021 **11-767 On-Device Machine Learning** Co-Emma Strubell # Students: 31, FA
- 11-777 MultiModal Machine Learning** # Students: 42, SP



## Diversity and Inclusion

2022	<b>NAACL 2022 DEI Co-Chair</b>	
2021	<b>Restructuring of LTI PhD Admissions,</b>	2yr
2020	<b>LTI DEI Committee,</b>	2yrs
2019	<b>CrashCourse AI</b> Educational YouTube series targeted at high-school age viewers. Hosted by Jabril Ashe. Co-Written with Lana Yarosh and Tim Weninger,	1yr
2018	<b>ACM Council on Diversity &amp; Inclusion</b> Investigating and initiating institutional change within ACM on behalf of underrepresented groups.,	1yr
	– <b>Grace Hopper PC member</b> Review submissions to AI Technical Track,	1yr
2016	<b>NCWIT Collegiate Award</b> Review applications for the National Center for Women & Information Technology's Collegiate Award honoring college women, ISI	3yrs
2009	<b>NCWIT Aspirations in Computing</b> 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	6yrs
	– <b>Tech Junket/Women in CS</b> Outreach for local Urbana-Champaign pre-college students, UIUC	2yrs
2008	<b>Freshman Research Mentor</b> Mentored students to perform research, UTexas	1yr
	– <b>First Bytes</b> Helped organize a summer camp for girls interested in CS, UTexas	
	– <b>Co-Founded Breakfast Bytes</b> Professor talks for pre-college students, UTexas	1yr
	– <b>CS Roadshow</b> CS presentations at Austin middle and high schools, UTexas	1yr

## (Senior) Area Chair / Action Editor

2024	<b>Conference on Computer Vision and Pattern Recognition (CVPR)</b>	CV
	– <b>International Conference on Learning Representations (ICLR)</b>	AI/ML
2023	<b>Neural Information Processing Systems (NeurIPS)</b>	AI/ML
	– <b>International Conference on Machine Learning (ICML)</b>	AI/ML
	– <b>AE: Transactions on Machine Learning Research (TMLR)</b>	AI/ML
	– <b>Senior AE: ACL Rolling Review (ARR)</b>	NLP
	– <b>Ethics Co-Chair: Association for Computational Linguistics (ACL)</b>	NLP
	– <b>Empirical Methods in Natural Language Proc (EMNLP)</b>	NLP
2022	<b>International Conference on Learning Representations (ICLR)</b>	AI/ML
	– <b>Senior MR: Association for the Advancement of Artificial Intelligence (AAAI)</b>	AI/ML
	– <b>Senior AC: Empirical Methods in Natural Language Proc (EMNLP)</b>	NLP
	– <b>AE: Transactions on Machine Learning Research (TMLR)</b>	AI/ML
	– <b>Senior AE: ACL Rolling Review (ARR)</b>	NLP
	– <b>Neural Information Processing Systems (NeurIPS)</b>	AI/ML
2021	<b>International Conference on Learning Representations (ICLR)</b>	AI/ML
	– <b>Association for Computational Linguistics (ACL)</b>	NLP
	– <b>Empirical Methods in Natural Language Proc (EMNLP)</b>	NLP
	– <b>Neural Information Processing Systems (NeurIPS)</b>	AI/ML
	– <b>ACL Rolling Review (ARR)</b>	NLP
2020	<b>Association for Computational Linguistics (ACL)</b>	NLP
	– <b>Neural Information Processing Systems (NeurIPS)</b>	AI/ML
	– <b>Asia-Pacific chapter of the Association for Computational Linguistics (AACL)</b>	NLP
2019	<b>Association for Computational Linguistics (ACL)</b>	NLP
2018	<b>International Conference on Computational Linguistics</b>	NLP
2016	<b>Conference on Lexical and Computational Semantics (*SEM)</b>	NLP

## Reviewer

NLP	<b>ARR</b>	Association for Computational Linguistics Rolling Review	2021
	<b>ACL</b>	Association for Computational Linguistics	2017, 2018
	<b>CL</b>	Computational Linguistics Journal	2017 – 2022
	<b>CoLing</b>	International Conference on Computational Linguistics	2016
	<b>CoNLL</b>	Conference on Computational Natural Language Learning	2016 – 2018
	<b>EACL</b>	European Chapter of the Association for Computational Linguistics	2014, 17, 20
	<b>EMNLP</b>	Empirical Methods in Natural Language Processing	2013 – 2020
	<b>IJCNLP</b>	International Joint Conference on Natural Language Processing	2017
	<b>NAACL</b>	N. American Chapter of the Association for Computational Ling	2016 – 2019
	<b>NLE</b>	Natural Language Engineering Journal	2016
	<b>*SEM</b>	Joint Conference on Lexical and Computational Semantics	2020
	<b>TACL</b>	Transactions of the Assoc. for Computational Linguistics	2019 – 2023
Robo	<b>CoRL</b>	Conference on Robot Learning	2019 – 2021, 2023
	<b>AURO</b>	Autonomous Robots	2022
	<b>RSS</b>	Robotics: Science and Systems	2022
	<b>HRI</b>	Human Robot Interaction	2020 – 2023
	<b>ICRA</b>	International Conference on Robotics and Automation	2019, 2023
	<b>IJRR</b>	International Journal of Robotics Research	2017
	<b>IROS</b>	IEEE/RSJ International Conference on Intelligent Robots and Systems	2019, 2023
	<b>RA-L</b>	IEEE Robotics and Automation Letters	2019, 2023
AI/ML	<b>AAAI</b>	Association for the Advancement of Artificial Intelligence	2018, 2021
	<b>ICLR</b>	International Conference on Learning Representations	2019 – 2020
	<b>ICML</b>	International Conference on Machine Learning	2019
	<b>IJCAI</b>	International Joint Conference on Artificial Intelligence	2019
	<b>NeurIPS</b>	Neural Information Processing Systems	2018 – 2019
CV	<b>CVPR</b>	Computer Vision and Pattern Recognition	2020, 2023

## Organization (Workshops and Conference)

- 2022 **Workshop** *Embodied AI Workshop – Challenge Organizer*  
Computer Vision and Pattern Recognition
- 2021 **Workshop** *Embodied AI Workshop – Challenge Organizer*  
Computer Vision and Pattern Recognition
- 2020 **Workshop** *Embodied Vision, Actions & Language Workshop*  
European Conference on Computer Vision
  - **Workshop** *Workshop on Dataset Curation and Security*  
NeurIPS
- 2019 **Workshop** *Spatial Language Understanding and Grounded communication for Robotics*  
North American Chapter of the Association for Computational Linguistics
- 2018 **Conference** *Social Media Chair*  
North American Chapter of the Association for Computational Linguistics
  - **Workshop** *Generalization in the Age of Deep Learning*  
North American Chapter of the Association for Computational Linguistics
  - **Workshop** *Wordplay: Reinforcement and Language Learning in Text-Based Games* NeurIPS
- 2017 **Conference** *Student Scholarship Chair and Student Volunteer Coordinator*  
Conference on Empirical Methods in Natural Language Processing
  - **Workshop** *Language Grounding for Robotics*  
Conference of the Association for Computational Linguistics

## Invitations and Talks

- 2023 **Are We Really Talking to Robots?** “Dialogue with Robots” workshop, UPitt NSF Workshop  
**Words  $\neq$  language** Articulate Robots: Utilizing Language for Robot Learning RSS Workshop  
**Following Instructions and Asking Questions** *Learning by Asking for Intelligent Robots and Agents* RO-MAN Workshop
- 2022 **Can we *really* connect language to robotics?** *CoRL Wksp on Language and Robot Learning*  
**How machines learn language: Useful but wrong?** *12th Inter. Wksp on Language Production*  
**Following Instructions and Asking Questions** *Univ of Potsdam*  
*Univ California Santa Barbara NLP*  
*Georgia Tech NLP*  
*Microsoft Research NYC*  
*Penn State University*  
*Universitat Hamburg* Crossmodal Learning (CML) summer school  
*University of Stuttgart* Institute of Natural Language Processing  
*University of Pittsburgh NLP*
- 2021 *Univ of Illinois at Urbana-Champaign NLP*  
*Human Interaction for Robotic Navigation Workshop @ Inter. Conference on Computer Vision*  
**WebQA: Multihop and Multimodal QA** *PNNL Mega-AI Seminar*  
**WebQA: Multihop and Multimodal** *Microsoft Research Summit*  
**2nd Workshop on Advances in Language and Vision Research (ALVR)** *NAACL*  
**Instructions, Abstraction, and Theory-of-Mind** *Koç University AI center*  
**Understanding the Potential of Scaling Artificial Intelligence for Science Applications Panel**  
*Pacific Northwest National Lab*  
**Guest Lecture: Embodiment for NLP** *Univ of Pennsylvania*  
**Guest Lecture: Multimodality in NLP** *UWashington Linguistics*
- 2020 **The 2nd Workshop Beyond Vision and Language: Integrating Real-world Knowledge**  
*CoLing*  
**The University of Texas at Austin – Forum for AI**  
**Cornell Learning Machines seminar**  
**Stanford NLP seminar**  
**SRI Center for Vision Technology Lab Panel** *Embodied AI*
- 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*