Yonatan Bisk

Assistant Professor of Computer Science

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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 Categorial 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	**Hao Zhu**	he/him	*Theory of Mind*	*(co-G Neubig)*	LTI	2019 –
PhD	**Jared Fernandez**	he/him	*Efficiency*	*(co-E Strubell)*	LTI	2020 –
PhD	**Vidhi Jain**	she/her	*Language to Control*		RI	2021 –
PhD	**Tiffany Min**	she/her	*Embodiment*	*(co-R Salakhutdinov)*	MLD	2021 –
PhD	**Yingshan Chang**	she/her	*Multimodal Reasoning*		LTI	2022 –
PhD	**Abitha Thankaraj**	she/her	*Language to Control*	*(co-A Kumar)*	RI	2024 –

Alumni, Interns, and Undergraduates

Ugrad	**Claire Jin**	she/her	*Embodied Dialogue*			2024
Ugrad	**Maria Yampolsky**	she/her	*Audio*			2024
Intern	**Minyoung Hwang**	she/her	*Preference Learning*	*she/her*		2024
MS	**Quanting Xie**	he/him	*LLMs for Robotics*	*he/him*	MechE	2023
MSAII	**Seed emergence**					2024
	Harini Subramanyan		Juanyun Mai		Ameya Morbale	
	Karthik Natarajan		Noel D Souza		Bohao Zhang	
MRSD	**Assistive Robotics for Eldercare (*co-Z Erickson)**					2023
	Abhinav Gupta	he/him		Atharva Pusalkar	he/him	
	Praveen Venkatesh	he/him		Shaolin Kataria	he/him	
	Shivam Tripathy	he/him				
MLT	**Jimin Sun**	she/her	*Embodied Dialogue*		LTI	2022 – 2023

Ugrad	**Xiang Fan**		*Transformer Efficiency*	*(co-E Strubell)*		2022
Intern	**Andy Liu**		*Theory-of-Mind*	*(co-G Neubig)*		2022
Intern	**Deogratias Amani**	he/him	*Grounding*			2022
MRSD	**Modular Teleop with Autonomy (*co-Z Erickson)**					2022
	Jashkumar Diyora	he/him	Shruti Gangopadhyay	she/her		
	Jigar Patel	he/him	Prakhar Pradeep	he/him		
	Shivani Sivakumar	she/her				
MCDS	**Embodied Navigation and Interaction**					2022
	Adhokshaja Madhwaraj	he/him	Kushagra Mahajan	he/him		
	Sai Vishwas Padigi	he/him	Vineeth Reddy	he/him		
	Malaika Vijay	she/her	Zheng (Jessica) Zhong	she/her		
MCDS	**Embodied Dialogue and ToM**					2022
	Xinyue Chen	she/her	Nikhil Gupta	he/him		
	Benny Jiang	he/him	Shubham Phal	he/him		
	Prasoon Varshney	he/him				
MCDS	**Novel Concept Learning**					2022
	Bharani Ujjaini Kempaiah	she/her	Linyi Li	she/her		
MSAII	**Visual Patent Search**					2022
	Suchong Dong	she/her	Zhiyuan Guo	he/him		
	Mansi Goyal	she/her	Marta Mendez Simon	she/her		
	Sreenidhi Sundaram	she/her	Leon Van Den Berghe	he/him		
MLT	**Yingshan Chang**	she/her	*Multimodal Reasoning*		LTI	2020 – 2022
MLT	**Josh Zhanson**	he/him	*Embodied Visual Reps*		LTI	2020 – 2022
MS	**Xiaoyu (Erin) Zhang**	she/her	*Collaborative Robots*	*(co-O Kroemer)*	5th	2021 – 2022
Ugrad	**Feiyu (Gavin) Zhu**		*Video Summarization*	*(co-C Paxton)*		2021
Intern	**Melanie Sclar**		*Symmetric Theory-of-Mind*	*(co-G Neubig)*		2021
Intern	**Blessing Bassey**		*TextVQA*			2021

Journal Publications

1 **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

2 **The Return of Lexical Dependencies: Neural Lexicalized PCFGs** 2020
Hao Zhu, Yonatan Bisk, Graham Neubig
Transactions of the Association for Computational Linguistics

3 **An HDP Model for Inducing Combinatory Categorial Grammars** 2013
Yonatan Bisk, Julia Hockenmaier
Transactions of the Association for Computational Linguistics

Conference Publications

4 **OpenEQA: Embodied Question Answering in the Era of Foundation Models** 2024
Arjun Majumdar, Anurag Ajay, Xiaohan Zhang, Pranav Putta, Sriram Yenamandra, Mikael Henaff, Sneha Silwal, Paul Mcvay, Oleksandr Maksymets, Sergio Arnaud, Karmesh Yadav, Qiyang Li, Ben Newman, Mohit Sharma, Vincent Berges, Shiqi Zhang, Pulkit Agrawal, Yonatan Bisk, Dhruv Batra, Mrinal Kalakrishnan, Franziska Meier, Chris Paxton, Sasha Sax, Aravind Rajeswaran
Conference on Computer Vision and Pattern Recognition

5 **SOTOPIA: Interactive Evaluation for Social Intelligence in Language Agents** 2024
Xuhui Zhou, Hao Zhu, Leena Mathur, Ruohong Zhang, Haofei Yu, Zhengyang Qi, Louis-Philippe Morency, Yonatan Bisk, Daniel Fried, Graham Neubig, Maarten Sap
The Twelfth International Conference on Learning RepresentationsSpotlight

6 **MOSAIC: Learning Unified Multi-Sensory Object Property Representations for Robot Perception** 2024
Gyan Tatiya, Jonathan Francis, Ho-Hsiang Wu, Yonatan Bisk, Jivko Sinapov
IEEE International Conference on Robotics and Automation

7 **WebArena: A Realistic Web Environment for Building Autonomous Agents** 2024
Shuyan Zhou, Frank F. Xu, Hao Zhu, Xuhui Zhou, Robert Lo, Abishek Sridhar, Xianyi Cheng, Yonatan Bisk, Daniel Fried, Uri Alon, Graham Neubig
The Twelfth International Conference on Learning Representations

8 **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

9 **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

10 **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

11 **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

12 **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

13 **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

14 **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 Oral

15 **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

16 **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

17 **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

18 **EvEntS ReaLM: 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

19 **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

20 **Transformers are Adaptable Task Planners** 2022
Vidhi Jain, Yixin Lin, Eric Undersander, Yonatan Bisk, Akshara Rai
Conference on Robot Learning

21 **Symmetric Machine Theory of Mind** 2022
Melanie Sclar, Graham Neubig, Yonatan Bisk
39th International Conference on Machine Learning

22 **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,

23 **Simulated Language Learning from Communicative Goals and Linguistic Input** 2022
Hao Zhu, Yonatan Bisk, Graham Neubig
Annual Meeting of the Cognitive Science SocietyOral

24 **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

25 **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 LinguisticsOral

26 **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

27 **WebQA: Multihop and Multimodal QA** 2022
Yingshan Chang, Mridu Narang, Hisami Suzuki, Guihong Cao, Jianfeng Gao, Yonatan Bisk
Conference on Computer Vision and Pattern RecognitionOral

28 **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

29 **Language Grounding with 3D Objects** 2021
Jesse Thomason, Mohit Shridhar, Yonatan Bisk, Chris Paxton, Luke Zettlemoyer
Conference on Robot Learning

30 **TACo: Token-aware Cascade Contrastive Learning for Video-Text Alignment** 2021
Jianwei Yang, Yonatan Bisk, Jianfeng Gao
International Conference on Computer Vision

31 **Few-shot Language Coordination by Modeling Theory of Mind** 2021
Hao Zhu, Graham Neubig, Yonatan Bisk
The Thirty-eighth International Conference on Machine Learning

32 **Grounding 'Grounding' in NLP** 2021
Khyathi Raghavi Chandu, Yonatan Bisk, Alan W Black
Findings of The 2021 Conference of the Association for Computational Linguistics

33 **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 LinguisticsOral

34 **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

35 **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

36 **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 LinguisticsOral

37 **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 ProcessingOral

38 **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

39 **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)

40 **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 IntelligenceOral

41 **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

42 **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

43 **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

44 **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***

45 **HellaSwag: Can a Machine Really Finish Your Sentence?** 2019
Rowan Zellers, Ari Holtzman, Yonatan Bisk, Ali Farhadi, Yejin Choi
Association for Computational Linguistics

46 **From Recognition to Cognition: Visual Commonsense Reasoning** 2019
Rowan Zellers, Yonatan Bisk, Ali Farhadi, Yejin Choi
The IEEE Conference on Computer Vision and Pattern RecognitionOral

47 **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 RecognitionOral

48 **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)

49 **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

50 **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 LinguisticsOral

51 **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 SocietyOral

52 **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 ProcessingOral

53 **Synthetic and Natural Noise Both Break Neural Machine Translation** 2018
Yonatan Belinkov, Yonatan Bisk
6th International Conference on Learning RepresentationsOral

54 **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)

55 **Natural Language Inference from Multiple Premises** 2017
Alice Lai, Yonatan Bisk, Julia Hockenmaier
Eighth International Joint Conference on Natural Language ProcessingOral

56 **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 LinguisticsOral

57 **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

58 **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

59 **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

60 **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)

61 **Simple Robust Grammar Induction with Combinatory Categorial Grammar** 2012
Yonatan Bisk, Julia Hockenmaier
Twenty-Sixth Conference on Artificial Intelligence (AAAI-12)

62 **Document-Topic Hierarchies from Document Graphs** 2012
Tim Weninger, Yonatan Bisk, Jiawei Han
21st ACM international conference on Information and knowledge management (CIKM 2012)

63 **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

64 **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

65 **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

66 **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

67 **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

68 **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

69 **Inducing Grammars with and for Neural Machine Translation** 2018
Ke Tran, Yonatan Bisk
2nd Workshop on Neural Machine Translation

70 **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

71 **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

72 **Unsupervised Neural Hidden Markov Models** 2016
Ke Tran, Yonatan Bisk, Ashish Vaswani, Daniel Marcu, Kevin Knight
Workshop on Structured Prediction for NLPOral

73 **Induction of Linguistic Structure with Combinatory Categorial Grammars** 2012
Yonatan Bisk, Julia Hockenmaier
NAACL HLT Workshop on Induction of Linguistic Structure

Preprint Publications

74 **Skews in the Phenomenon Space Hinder Generalization in Text-to-Image Generation** 2024
Yingshan Chang, Yasi Zhang, Zhiyuan Fang, Yingnian Wu, Yonatan Bisk, Feng Gao
ArXiv

75 **Direct Preference Optimization of Video Large Multimodal Models from Language Model Reward** 2024
Ruohong Zhang, Liangke Gui, Zhiqing Sun, Yihao Feng, Keyang Xu, Yuanhan Zhang, Di Fu, Chunyuan Li, Alexander Hauptmann, Yonatan Bisk, Yiming Yang
ArXiv

76 **Vid2Robot: End-to-end Video-conditioned Policy Learning with Cross-Attention Transformers** 2024
Vidhi Jain, Maria Attarian, Nikhil J Joshi, Ayzaan Wahid, Danny Driess, Quan Vuong, Pannag R Sanketi, Pierre Sermanet, Stefan Welker, Christine Chan, Igor Gilitschenski, Yonatan Bisk, Debidatta Dwibedi
ArXiv

77 **SOTOPIA-π: Interactive Learning of Socially Intelligent Language Agents** 2024
Ruiyi Wang, Haofei Yu, Wenxin Zhang, Zhengyang Qi, Maarten Sap, Graham Neubig, Yonatan Bisk, Hao Zhu
ArXiv

78 **Toward General-Purpose Robots via Foundation Models: A Survey and Meta-Analysis** 2023
Yafei Hu, Quanting Xie, Vidhi Jain, Jonathan Francis, Jay Patrikar, Nikhil Keetha, Seungchan Kim, Yaqi Xie, Tianyi Zhang, Zhibo Zhao, Yu-Quan Chong, Chen Wang, Katia Sycara, Matthew Johnson-Roberson, Dhruv Batra, Xiaolong Wang, Sebastian Scherer, Zsolt Kira, Fei Xia, Yonatan Bisk
ArXiv

79 **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 Büchler, 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
ArXiv

80 **Reasoning about the Unseen for Efficient Outdoor Object Navigation** 2023
Quanting Xie, Tianyi Zhang, Kedi Xu, Matthew Johnson-Roberson, Yonatan Bisk
ArXiv

81 **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

82 **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

83 **Multi-View Learning for Vision-and-Language Navigation** 2020
Qiaolin Xia, Xiujun Li, Chunyuan Li, Yonatan Bisk, Zhifang Sui, Jianfeng Gao, Yejin Choi, Noah A. Smith
ArXiv

84 **FIND: Identifying Functionally and Structurally Important Features in Protein Sequences with Deep Neural Networks** 2019
Ranjani Murali, James Hemp, Victoria Orphan, Yonatan Bisk
bioRxiv

85 **CHALET: Cornell House Agent Learning Environment** 2018
Claudia Yan, Dipendra Misra, Andrew Bennett, Aaron Walsman, Yonatan Bisk, Yoav Artzi
ArXiv Preprint 1801.07357

Thesis Committees

–	**PhD** *Gabe Sarch*	Katerina Fragkiadaki and Mike Tarr, CMU
2024	**PhD** *Liangke Gui*	Alex Hauptmann, CMU
2024	**PhD** *Jielin Qiu*	Lei Li & Christos Faloutsos, CMU
2024	**PhD** *Nikita Srivatsan*	Taylor Berg-Kirkpatrick, CMU
2024	**PhD** *Lijun Yu*	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

2024	**11-777 MultiModal Machine Learning**	*Co-Daniel Fried* # Students: 135, SP
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 **NAACL 2022 DEI Co-Chair**

2021 **Restructuring of LTI PhD Admissions**, *2yr*

2020 **LTI DEI Committee**, 2yrs

2019 **CrashCourse AI** Educational YouTube series targeted at high-school age viewers. Hosted by Jabril Ashe. Co-Written with Lana Yarosh and Tim Weninger, *1yr*

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 *3yrs*

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 *6yrs*

– **Tech Junket/Women in CS** Outreach 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*

(Senior) Area Chair / Action Editor

2024 **Conference on Computer Vision and Pattern Recognition (CVPR)** *CV*

– **International Conference on Learning Representations (ICLR)** *AI/ML*

– **European Chapter of the Association for Computational Linguistics (EACL)** *NLP*

– **Senior AE: ACL Rolling Review (ARR)** *NLP*

– **AE: Transactions on Machine Learning Research (TMLR)** *AI/ML*

2023 **Neural Information Processing Systems (NeurIPS)** *AI/ML*

– **International Conference on Machine Learning (ICML)** *AI/ML*

– **AE: Transactions on Machine Learning Research (TMLR)** *AI/ML*

– **Senior AE: ACL Rolling Review (ARR)** *NLP*

– **Ethics Co-Chair: Association for Computational Linguistics (ACL)** *NLP*

– **Empirical Methods in Natural Language Proc (EMNLP)** *NLP*

2022 **International Conference on Learning Representations (ICLR)** *AI/ML*

– **Senior MR: Association for the Advancement of Artificial Intelligence (AAAI)** *AI/ML*

– **Senior AC: Empirical Methods in Natural Language Proc (EMNLP)** *NLP*

– **AE: Transactions on Machine Learning Research (TMLR)** *AI/ML*

– **Senior AE: ACL Rolling Review (ARR)** *NLP*

– **Neural Information Processing Systems (NeurIPS)** *AI/ML*

2021 **International Conference on Learning Representations (ICLR)** *AI/ML*

– **Association for Computational Linguistics (ACL)** *NLP*

– **Empirical Methods in Natural Language Proc (EMNLP)** *NLP*

– **Neural Information Processing Systems (NeurIPS)** *AI/ML*

– **ACL Rolling Review (ARR)** *NLP*

2020 **Association for Computational Linguistics (ACL)** *NLP*

– **Neural Information Processing Systems (NeurIPS)** *AI/ML*

– **Asia-Pacific chapter of the Association for Computational Linguistics (AACL)** *NLP*

2019 **Association for Computational Linguistics (ACL)** *NLP*

2018 **International Conference on Computational Linguistics** *NLP*

2016 **Conference on Lexical and Computational Semantics (*SEM)** *NLP*

Reviewer

NLP	**ARR**	Association for Computational Linguistics Rolling Review	*2021*
	ACL	Association for Computational Linguistics	*2017, 2018*
	CL	Computational Linguistics Journal	*2017 – 2022*

	CoLing	International Conference on Computational Linguistics	*2016*
	CoNLL	Conference on Computational Natural Language Learning	*2016 – 2018*
	EACL	European Chapter of the Association for Computational Linguistics	*2014, 17, 20*
	EMNLP	Empirical Methods in Natural Language Processing	*2013 – 2020*
	IJCNLP	International Joint Conference on Natural Language Processing	*2017*
	NAACL	N. American Chapter of the Association for Computational Ling	*2016 – 2019*
	NLE	Natural Language Engineering Journal	*2016*
	***SEM**	Joint Conference on Lexical and Computational Semantics	*2020*
	TACL	Transactions of the Assoc. for Computational Linguistics	*2019 – 2023*
Robo	**CoRL**	Conference on Robot Learning	*2019 – 2021,2023*
	AURO	Autonomous Robots	*2022*
	RSS	Robotics: Science and Systems	*2022, 2024*
	HRI	Human Robot Interaction	*2020 – 2024*
	ICRA	International Conference on Robotics and Automation	*2019,2023, 2024*
	IJRR	International Journal of Robotics Research	*2017*
	IROS	IEEE/RSJ International Conference on Intelligent Robots and Systems	*2019,2023*
	RA-L	IEEE Robotics and Automation Letters	*2019,2023*
AI/ML	**AAAI**	Association for the Advancement of Artificial Intelligence	*2018, 2021*
	ICLR	International Conference on Learning Representations	*2019 – 2020*
	ICML	International Conference on Machine Learning	*2019*
	IJCAI	International Joint Conference on Artificial Intelligence	*2019*
	NeurIPS	Neural Information Processing Systems	*2018 – 2019*
CV	**CVPR**	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: Reinformcent 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

2024 **Talking to Robots** University of Maryland, College Park

2023 **Are We Really Talking to Robots?** "Dialogue with Robots" workshop, UPitt NSF Workshop

Words ≠ 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

Following Instructions and Asking Questions Goal Conditioned RL Workshop @ NeurIPS

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*