

JESSE THOMASON

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RESEARCH INTERESTS

My research focuses on language grounding and natural language processing applications for robotics, including how dialog with humans can facilitate both robot task execution and learning.

EDUCATION

- PhD Computer Science, University of Texas at Austin 2013-18
- BS Computer Science; Mathematics, University of Pittsburgh 2009-13

RESEARCH and INDUSTRY POSITIONS

- University of Southern California, Assistant Professor 2021-...
- Amazon Alexa AI, Visiting Academic 2020-2021
- University of Washington, Research Associate (Postdoc) with Luke Zettlemoyer 2018-20
- Google, PhD Intern 2016
- Einhorn Media Group 2011-13

FELLOWSHIPS and AWARDS

- National Science Foundation Graduate Research Fellowship (NSF GRFP) 2015
- Microelectronics and Computer Development (MCD) Fellowship, University of Texas at Austin 2013
- Computer Science Outstanding Undergraduate Student Award, University of Pittsburgh 2013
- Honors College Chancellor's Scholarship, University of Pittsburgh 2009

PUBLICATIONS

Conference and Journal Papers

- [Experience Grounds Language](#)
Yonatan Bisk, Ari Holtzman, **Jesse Thomason**, Jacob Andreas, Yoshua Bengio, Joyce Chai, Mirella Lapata, Angeliki Lazaridou, Jonathan May, Aleksandr Nisnevich, Nicolas Pinto, and Joseph Turian.
Empirical Methods in Natural Language Processing (EMNLP), 2020.
- [RMM: A Recursive Mental Model for Dialog Navigation](#)
Homero Roman Roman, Yonatan Bisk, **Jesse Thomason**, Asli Celikyilmaz, and Jianfeng Gao.
Findings of Empirical Methods in Natural Language Processing (EMNLP Findings), 2020.
- [Interpreting Black Box Models via Hypothesis Testing](#)
Collin Burns, **Jesse Thomason**, and Wesley Tansey.
Foundations of Data Science (FODS), 2020.
- [ALFRED: A Benchmark for Interpreting Grounded Instructions for Everyday Tasks](#)
Mohit Shridhar, **Jesse Thomason**, Daniel Gordon, Yonatan Bisk, Winson Han, Roozbeh Mottaghi, Luke Zettlemoyer, and Dieter Fox.
Computer Vision and Pattern Recognition (CVPR), 2020.

- **Jointly Improving Parsing and Perception for Natural Language Commands through Human-Robot Dialog**
Jesse Thomason, Aishwarya Padmakumar, Jivko Sinapov, Nick Walker, Yuqian Jiang, Harel Yedidsion, Justin Hart, Peter Stone, and Raymond J. Mooney.
The Journal of Artificial Intelligence Research (JAIR) 67, 2020.
- **Vision-and-Dialog Navigation**
Jesse Thomason, Michael Murray, Maya Cakmak, and Luke Zettlemoyer.
Conference on Robot Learning (CoRL), 2019.
- **Improving Robot Success Detection using Static Object Data**
Rosario Scalise, **Jesse Thomason**, Yonatan Bisk, and Siddhartha Srinivasa.
Intelligent Robots and Systems (IROS), 2019.
- **Augmenting Knowledge through Statistical, Goal-oriented Human-Robot Dialog**
Saeid Amiri, Sujay Bajracharya, Cihangir Goktolga, **Jesse Thomason**, and Shiqi Zhang.
Intelligent Robots and Systems (IROS), 2019.
- **Shifting the Baseline: Single Modality Performance on Visual Navigation & QA**
Jesse Thomason, Daniel Gordon, and Yonatan Bisk.
North American Chapter of the Association for Computational Linguistics (NAACL), 2019.
- **Improving Grounded Natural Language Understanding through Human-Robot Dialog**
Jesse Thomason, Aishwarya Padmakumar, Jivko Sinapov, Nick Walker, Yuqian Jiang, Harel Yedidsion, Justin Hart, Peter Stone, and Raymond J. Mooney.
International Conference on Robotics and Automation (ICRA), 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), 2019.
- **Interaction and Autonomy in RoboCup@Home and Building-Wide Intelligence**
Justin Hart, Harel Yedidsion, Yuqian Jiang, Nick Walker, Rishi Shah, **Jesse Thomason**, Aishwarya Padmakumar, Rolando Fernandez, Jivko Sinapov, Raymond J. Mooney, and Peter Stone.
AI-HRI AAAI Fall Symposium Series (AAAI-FSS), 2018.
- **Multi-modal Predicate Identification using Dynamically Learned Robot Controllers**
Saeid Amiri, Suhua Wei, Shiqi Zhang, Jivko Sinapov, **Jesse Thomason**, and Peter Stone.
International Joint Conference on Artificial Intelligence (IJCAI), 2018.
- **Guiding Exploratory Behaviors for Multi-Modal Grounding of Linguistic Descriptions**
Jesse Thomason, Jivko Sinapov, Raymond J. Mooney, and Peter Stone.
Conference on Artificial Intelligence (AAAI), 2018.
- **Maximum-Variance Total Variation Denoising for Interpretable Spatial Smoothing**
Wesley Tansey, **Jesse Thomason**, and James G. Scott.
Conference on Artificial Intelligence (AAAI), 2018.
- **Opportunistic Active Learning for Grounding Natural Language Descriptions**
Jesse Thomason, Aishwarya Padmakumar, Jivko Sinapov, Justin Hart, Peter Stone, and Raymond J. Mooney.
Conference on Robot Learning (CoRL), 2017.
- **Improving Black-box Speech Recognition using Semantic Parsing**
Rodolfo Corona, **Jesse Thomason**, and Raymond J. Mooney.
International Joint Conference on Natural Language Processing (IJCNLP), 2017.
- **Multi-Modal Word Synset Induction**
Jesse Thomason and Raymond J. Mooney.
International Joint Conference on Artificial Intelligence (IJCAI), 2017.

- **Integrated Learning of Dialog Strategies and Semantic Parsing**
Aishwarya Padmakumar, **Jesse Thomason**, and Raymond J. Mooney.
European Chapter of the Association for Computational Linguistics (EACL), 2017.
- **BWIBots: A platform for bridging the gap between AI and human-robot interaction research**
Piyush Khandelwal, Shiqi Zhang, Jivko Sinapov, Matteo Leonetti, **Jesse Thomason**, Fangkai Yang, Ilaria Gori, Maxwell Svetlik, Priyanka Khante, Vladimir Lifschitz, J. K. Aggarwal, Raymond J. Mooney, and Peter Stone.
The International Journal of Robotics Research (IJRR), 2017.
- **Learning Multi-Modal Grounded Linguistic Semantics by Playing "I Spy"**
Jesse Thomason, Jivko Sinapov, Maxwell Svetlik, Peter Stone, and Raymond J. Mooney.
International Joint Conference on Artificial Intelligence (IJCAI), 2016.
- **Learning to Interpret Natural Language Commands through Human-Robot Dialog**
Jesse Thomason, Shiqi Zhang, Raymond J. Mooney, and Peter Stone.
International Joint Conference on Artificial Intelligence (IJCAI), 2015.
- **Integrating Language and Vision to Generate Natural Language Descriptions of Videos in the Wild**
Jesse Thomason, Subhashini Venugopalan, Sergio Guadarrama, Kate Saenko, and Raymond J. Mooney.
Conference on Computational Linguistics (COLING), 2014.
- **Prosodic Entrainment and Tutoring Dialogue Success**
Jesse Thomason, Huy Nguyen, and Diane Litman.
Artificial Intelligence in Education (AIED), 2013.
- **Differences in User Responses to a Wizard-of-Oz versus Automated System**
Jesse Thomason and Diane Litman.
North American Chapter of the Association for Computational Linguistics (NAACL), 2013.
- **Exploring Multi-dimensional Data on Mobile Devices with Single Hand Motion and Orientation Gestures**
Jesse Thomason and Jingtao Wang.
Human-computer Interaction with Mobile Devices and Services Companion (MobileHCI), 2012.
- **Differentiated service strategies for ad-hoc wireless sensor networks in harsh communication environments**
Jesse Thomason, Kenji Yoshigoe, R.B. Lenin, James M. Bridges, and Srini Ramaswamy.
Wireless Networks 18(5), 2012.

Thesis work

- **Continually Improving Grounded Natural Language Understanding through Human-Robot Dialog**
Jesse Thomason.
Department of Computer Science, The University of Texas at Austin, 2018.
- **Continuously Improving Natural Language Understanding for Robotic Systems through Semantic Parsing, Dialog, and Multi-modal Perception**
Jesse Thomason.
Doctoral Dissertation Proposal, 2016.

PROFESSIONAL ACTIVITIES and SERVICE

Invited Talks

- Workshop on NLP for Conversational AI ACL-20
- Princeton COS 598C: Language Grounding with Robots 2020
- Visually Grounded Interaction and Language (ViGIL) Workshop NeurIPS-19

- Semantic Policy and Action Representations for Autonomous Robots (SPAR) Workshop IROS-19
- Microsoft Research: Vision-and-Dialog Navigation 2019

Conference Organization / Area Chair

- **Area Chair:** IJCAI-20
- **Organizer:** Embodied Vision, Actions & Language Workshop (EVAL) at ECCV-20
- **Area Chair:** Language Grounding to Vision, Robotics and Beyond for ACL-20
- **Organizer:** First Workshop on Advances in Language and Vision Research (ALVR) at ACL-20
- **Co-Chair:** Combined Workshop on Spatial Language Understanding (SpLU) and Grounded Communication for Robotics (RoboNLP) at NAACL-19
- **Co-Chair:** Special Session on Physically Situated Dialog (RoboDIAL) at SIGDIAL-18
- **Organizer:** Workshop on Communicating with Robots Naturally (CWRN) at RSS-18

University

- Organizer: UW NLP Invited Talks Seminar 18-2019
- Organizer: UW RoboNLP Reading Group 18-2019
- Organizer: UW NLP Applications Reading Group 2018
- Organizer: UT Connecting Language Acquisition with Machine Perception Reading Group 14-2018

Conference and Workshop Reviewing

- North American Chapter of the Association for Computational Linguistics (NAACL) 16, 19, 2021
- European Chapter of the Association for Computational Linguistics (EACL) 2021
- International Conference on Learning Representations (ICLR) 2021
- Human in the Loop Dialogue Systems (HLDS) NeurIPS-20
- Conference on Robot Learning (CoRL) 18-2020
- Workshop on Spatial Language Understanding (SpLU) EMNLP-20
- Empirical Methods in Natural Language Processing (EMNLP) 17-2020
- Workshop on Language in Reinforcement Learning (LaReL) ICML-20
- Conference on Computational Natural Language Learning (CoNLL) 2019
- Advances in Neural Information Processing Systems (NeurIPS) 17, *2019

*Top 50% of reviewers.

- International Symposium on Robot and Human Interactive Communication (RO-MAN) 2019
- Association for Computational Linguistics (ACL) 18-2019
- International Conference on Intelligent Robots and Systems (IROS) 18-2019
- International Conference on Machine Learning (ICML) 2019
- Autonomous Agents and Multi-Agent Systems (AAMAS) 15-16, 2019
- Human-Robot Interaction (HRI) 2018
- International Conference on Computational Linguistics (COLING) 2018
- Robotics: Science and Systems (RSS) 17-2018
- International Joint Conference on Artificial Intelligence (IJCAI) 2017
- Workshop on Language Grounding for Robotics (RoboNLP) ACL-17

Journal Reviewing

- Computational Linguistics (CL) [2 articles]
- Elsevier Journal of Artificial Intelligence (AIJ)
- Springer Autonomous Agents and Multi-Agent Systems (AGNT)
- ACM Transactions on Interactive Intelligent Systems (TiiS)
- Springer Autonomous Robots (AURO)

Standing Reviewer 2019-...

2019

2019

2018

2018