Baoxiong Jia

Contact Information

491 Engineering VI
University of California, Los Angeles
Los Angeles, CA 90095, U.S.A.

Phone: (240)550-4292
Email: baoxiongjia@cs.ucla.edu
Homepage: buzz-beater.github.io/

Education

University of California, Los Angeles, Los Angeles, U.S.
Doctor of Philosophy (Ph.D.), Computer Science — Sept. 2019 - Dec. 2022
Advisor: Prof. Song-Chun Zhu
Overall GPA: 4.00/4.00

University of California, Los Angeles, Los Angeles, U.S.
Master of Science (M.S.), Computer Science — Sept. 2017 - June 2019
Advisor: Prof. Song-Chun Zhu
Overall GPA: 4.00/4.00

Peking University, Beijing, China
Bachelor of Science (B.S.) with **honor**, Computer Science — Sept. 2014 - July 2018
Advisor: Prof. Yao Guo
Overall GPA: 3.63/4.00 (rank: 29/193)

Research Interest

Computer Vision	Activity Recognition/Prediction, 4D Scene Understanding
Artificial Intelligence	Planning and Inverse Planning, Intent Recognition
Machine Learning	Representation Learning, Neural-symbolic Methods

Publication

* denotes equal contribution.

Journal

[1] Siyuan Qi, **Baoxiong Jia**, Siyuan Huang, Ping Wei, Song-Chun Zhu. A Generalized Earley Parser for Human Activity Parsing and Prediction. *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI) 2020.

[2] Yuanchun Li, **Baoxiong Jia**, Yao Guo, Xiangqun Chen. Mining User Reviews for Mobile App Comparisons. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (IMWUT) 2017. (presented at UbiComp17)

Conference

[1] Siyuan Huang*, Zan Wang*, Puhao Li, **Baoxiong Jia**, Tengyu Liu, Yixin Zhu, Wei Liang, Song-Chun Zhu. Diffusion-based Generation, Optimization, and Planning in 3D Scenes. *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR) 2023.

[2] **Baoxiong Jia***, Yu Liu*, Siyuan Huang. Unsupervised Object-Centric Learning with Bi-Level Optimized Query Slot Attention. *International Conference on Learning Representations* (ICLR) 2023.

[3] Ran Gong, Yizhou Zhao, Xiaofeng Gao, Jiangyong Huang, Qingyang Wu, Wensi Ai, Ziheng Zhou, **Baoxiong Jia**, Song-Chun Zhu, Siyuan Huang. ARNOLD: A Benchmark for Language-Grounded Task Learning with Continuous States in Realistic Scenes. *Workshop on Language and Robot Learning* (LangRob@CoRL) 2022. (Spotlight)

[4] **Baoxiong Jia**, Ting Lei, Song-Chun Zhu, Siyuan Huang. EgoTaskQA: Understanding Human Tasks in Egocentric Videos. *Advances in Neural Information Processing Systems Datasets and Benchmarks* (NeurIPS Dataset Track) 2022.

[5] Chi Zhang*, Sirui Xie*, **Baoxiong Jia***, Yixin Zhu, Ying Nian Wu, Song-Chun Zhu. Learning Algebraic Representation for Systematic Generalization in Abstract Reasoning. *European Conference on Computer Vision* (ECCV) 2022.

[6] Peiyu Yu, Sirui Xie, Xiaojian Ma, **Baoxiong Jia**, Bo Pang, Ruiqi Gao, Yixin Zhu, Song-Chun Zhu, Ying Nian Wu. *Interational Conference on Machine Learning* (ICML) 2022.

[7] Chi Zhang*, **Baoxiong Jia***, Song-Chun Zhu, Yixin Zhu. Abstract Spatial-Temporal Reasoning via Probabilistic Abduction and Execution. *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR) 2021.

[8] Chi Zhang, **Baoxiong Jia**, Mark Edmonds, Song-Chun Zhu, Yixin Zhua. ACRE: Abstract Causal REasoning Beyond Covariation. *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR) 2021.

[9] **Baoxiong Jia**, Yixin Chen, Siyuan Huang, Yixin Zhu, Song-Chun Zhu. LEMMA: A Multiview Dataset for LEarning Multi-agent Multi-task Activities. *European Conference on Computer Vision* (ECCV) 2020.

[10] Chi Zhang*, **Baoxiong Jia***, Feng Gao, Yixin Zhu, Hongjing Lu, Song-Chun Zhu. Learning Perceptual Inference by Contrasting. *Advances in Neural Information Processing Systems* (NeurIPS) 2019. (Spotlight)

[11] Chi Zhang*, Feng Gao*, **Baoxiong Jia**, Yixin Zhu, Song-Chun Zhu. RAVEN: A Dataset for Relational and Analogical Visual rEasoNing. *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR) 2019.

[12] Siyuan Qi*, Wenguan Wang*, **Baoxiong Jia**, Jianbing Shen, Song-Chun Zhu. Learning Human-Object Interactions by Graph Parsing Neural Networks. *European Conference on Computer Vision* (ECCV) 2018.

[13] Siyuan Qi, **Baoxiong Jia**, Song-Chun Zhu. 2018. Generalized Earley Parser: Bridging Symbolic Grammars and Sequence Data for Future Prediction *International Conference on Machine Learning* (ICML) 2018.

Research Experience

Center for Vision, Cognition, Learning and Autonomy UCLA, U.S.A.
Research Assistant, advised by: Prof. Song-Chun Zhu Sept. 2017 - Dec. 2022

- 4D understanding of human activities and forecasting of both actions and scenes.
- Intention prediction and inverse planning based on stochastic grammar parsing, inverse reinforcement learning and theory of mind theories.
- Visual reasoning and induction for analogy in Raven Progressive Matrices.

Beijing Institute for General Artificial Intelligence BIGAI, P.R.C.
Research Intern, advised by: Dr. Siyuan Huang Oct. 2021 - Dec. 2022

- 4D human activity understanding and prediction with common sense knowledge base.
- Interactive learning of world dynamics and human intent.

Alexa Research, Teachable AI Team Amazon Inc., U.S.A.
Applied Scientist Intern, advised by: Dr. Qing Ping June 2021 - Sept. 2021

- Conducted research on spatial-temporal reasoning for video question answering with a special focus on leveraging video-language models for generating spatial-temporal grounding and compositional methods for reasoning.

Research and Development Department DMAI Inc., U.S.A.
Software Engineering Intern, mentored by: Tao Yuan Apr. 2019 - Mar. 2020

- Development of cognitive platform: 3D pose estimation, head pose and pointing gesture, modeling human beliefs.

Operating System Lab Peking University, P.R.C.
Research Intern, advised by: Prof. Yao Guo Feb. 2016 - May. 2018

- Automatic app comparison generation by mining comparative user reviews from app markets and applying sentiment analysis methods.

Teaching Experience

University of California, Los Angeles, Department of Computer Science
COM SCI 32 Introduction to Computer Science II, *Teaching Assistant* Spring 2020

	COM SCI 131 Programming Languages, *Teaching Assistant*	Fall 2020
	COM SCI 31 Introduction to Computer Science I, *Teaching Assistant*	Spring 2021

Selected Honors and Awards

Outstanding Reviewer Award, ICLR	2021
Graduate Division Award, UCLA	2020
Outstanding Reviewer Award, CVPR	2020
NeurIPS Travel Award, NeurIPS	2019
Excellent College Graduate Award, Peking University	2018
Kwang-Hua Scholarship, Peking University	2014 - 2015
Award for Academic Excellence, Peking University	2015 - 2016

Services

Reviewer	IEEE Transactions on Image Processing (TIP)	2021
Reviewer	International Conference on Machine Learning (ICML)	2021-2023
Reviewer	Computer Vision and Pattern Recognition (CVPR)	2019-2023
Reviewer	International Conference on Learning Representation (ICLR)	2021-2023
Reviewer	AAAI Conference on Artificial Intelligence (AAAI)	2020-2021
Reviewer	Neural Information Processing Systems (NeurIPS)	2020-2022
Reviewer	European Conference on Computer Vision (ECCV)	2020,2022
Reviewer	International Conference on Computer Vision (ICCV)	2019-2023