Xiao Ma

National University of Singapore

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Education

National University of Singapore (NUS), Singapore	2017 - Present

Doctor of Philosophy in Computer Science
Supervisor: Prof. David Hsu

Shanghai Jiao Tong University (SJTU), Shanghai	2013 - 2017

Bachelor of Science in Computer Science

Work Experiences

Research Scientist at SEA AI Lab	Jul. 2021 - present
Research Intern at SEA AI Lab (hosted by Dr. Min Lin)	Apr. 2021 - Jun. 2021
Research Intern at SenseTime Research (hosted by Dr. Shuai Yi)	Oct. 2019 - Sept. 2020
Software Engineer Intern at Intel Asia Pacific R & D Center	May 2016 - Dec. 2016

Research Interests

My research focuses on uncertainty modeling, reinforcement learning, graph neural networks and their applications to vision-based robot systems. I aim to build robust models of the world for decision making in unstructured environments.

Publications

Daisheng Jin*, **Xiao Ma***, Chongzhi Zhang*, Yizhuo Zhou, Jiashu Tao, Mingyuan Zhang, Haiyu Zhao, Shuai Yi, Zhoujun Li, Xiaolong Liu, Hongsheng Li. "Towards Overcoming False Positives in Visual Relationship Detection", *British Machine Vision Conference (BMVC), 2021* (*equal contribution)

Xiao Ma, Siwei Chen, David Hsu, Wee Sun Lee. "Contrastive Variational Model-Based Reinforcement Learning for Complex Observations", *The 4th Conference on Robot Learning (CoRL), 2020*

Jiawei Ren, Cunjun Yu, Shunan Sheng, **Xiao Ma**, Haiyu Zhao, Shuai Yi, Hongsheng Li. "Balanced Meta-Softmax for Long-Tailed Visual Recognition", *Advances in Neural Information Processing Systems (NeurIPS), 2020*

Siwei Chen, **Xiao Ma**, David Hsu. "DinerDash Gym: A Benchmark for Policy Learning in High-Dimensional Action Space", *In IL workshop, Robotics: Science and Systems (RSS), 2020*

Cunjun Yu*, **Xiao Ma***, Jiawei Ren, Haiyu Zhao, Shuai Yi. "Spatio-Temporal Graph Transformer Networks for Pedestrian Trajectory Prediction", *European Conference on Computer Vision (ECCV), 2020* (*equal contribution)

Zuowu Zheng, Xiaofeng Gao, **Xiao Ma**, Guihai Chen. "Predicting Hot Events in the Early Period through Bayesian Model for Social Networks", *IEEE Transactions on Knowledge and Data Engineering (TKDE), 2020*

Xiao Ma, Peter Karkus, David Hsu, Wee Sun Lee, Nan Ye. "Discriminative Particle Filter Reinforcement Learning for Complex Partial Observations", *International Conference on Learning Representations (ICLR), 2020*

Xiao Ma*, Peter Karkus*, David Hsu, Wee Sun Lee. "Particle Filter Recurrent Neural Networks", *AAAI Conference on Artificial Intelligence (AAAI), 2020* (**Spotlight**, *equal contribution)

Peter Karkus, **Xiao Ma**, David Hsu, Leslie Pack Kaelbling, Wee Sun Lee, Tomas Lozano-Perez. "Differentiable Algorithm Networks for Composable Robot Learning", *Robotics: Science and Systems (RSS), 2019* (**Best Student/System Paper Finalist**)

Xiao Ma, Peter Karkus, David Hsu, Wee Sun Lee "PF-LSTM: Belief State Particle Filter for LSTM", *In RLPO Workshop, Advances in Neural Information Processing Systems (NeurIPS), 2018*

Xiao Ma, Xiaofeng Gao, Guihai Chen. "BEEP: a Bayesian perspective Early state Event Prediction model for online social networks", *IEEE International Conference on Data Mining (ICDM), 2017*

Xiao Ma, Zhenzhe Zheng, Fan Wu and Guihai Chen. "Trust-Based Time Series Data Model for Mobile Crowdsensing", *IEEE International Conference on Communications (ICC), 2017*

Awards

Academic Excellence Scholarship	2014
Honorable Mention of Mathematical Contest In Modeling	2015
Academic Excellence Scholarship	2016
Honorable Mention of Mathematical Contest In Modeling	2016
Excellent Project of the *National Undergraduate Training Programs for Innovation*	2016
NUS Research Scholarship	2017
Second Prize in iNTUition Hackathon	2017
ICRA 2018 Student Travel Grant	2018
Robotics: Science and Systems Best System Paper Finalist	2019
Robotics: Science and Systems Best Student Paper Finalist	2019
AAAI 2020 Student Travel Grant	2020
NUS School of Computing Research Achievement Award	2020

Professional Activities

Reviewer

- Conferences: NeurIPS (2020), WACV (2021, 2022), ICRA (2021), AAAI (2021), CVPR (2021), ICLR (2022)
- Journals: RA-L (2021, 2022)

Teaching

- CS3243: Introduction to Artificial Intelligence (Spring 2018)
- CS6244: Robot Motion Planning and Control (Winter 2018)
- CS5478: Intelligent Robots: Algorithms and Systems (Spring 2020)