Xiao Ma

National University of Singapore
e-mail: xiao-ma@comp.nus.edu.sg phone: +65 91429242 website: yusufma03.github.io

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

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", *ArXiv* (*equal contribution)

Xiao Ma, Siwei Chen, David Hsu, Wee Sun Lee. "Contrastive Variational Model-Based Reinforcement Learning for Complex Observations", *In Proceedings of The 4nd 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*

Work Experiences

Software Engineer Intern at Intel Asia Pacific R & D Center May 2016 - Dec. 2016
Research Intern at SenseTime Research Oct. 2019 - Sept. 2020

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 and Entrepreneurship* 2016
NUS Research Scholarship 2017
Second Prize in iNTUition Hackathon 2017
ICRA 2018 Student Travel Grant 2018
Robotics: Science and Systems Best System Paper Nomination 2019
Robotics: Science and Systems Best Student Paper Nomination 2019
AAAI 2020 Student Travel Grant 2020
NUS School of Computing Research Achievement Award 2020

Professional Activities

Reviewer

- Conferences: NeurIPS 2020, WACV 2021, ICRA 2021, AAAI 2021, CVPR 2021
- Journals: RA-L

Teaching

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