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 Bachelor of Science in COMPUTER SCIENCE

2013 - 2017

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 PrePrint Arxiv 2012.12510* (*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", In Proceedings of *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", In Proceedings of 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", In Proceedings of *International Conference on Learning Representations (ICLR)*, 2020

Xiao Ma*, Peter Karkus*, David Hsu, Wee Sun Lee. "Particle Filter Recurrent Neural Networks", In Proceedings of 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", In Proceedings of 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", In Proceedings of 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", In Proceedings of *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	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)