

Xiao Ma

SEA AI Lab

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EDUCATION

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| National University of Singapore (NUS), Singapore | 2017 - 2021 |
| 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

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|---|------------------------|
| 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 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

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 <i>National Undergraduate Training Programs for Innovation</i> | 2016 |
| NUS Research Scholarship | 2017 |
| Second Prize in iNTUition Hackathon | 2017 |
| ICRA 2018 Student Travel Grant | 2018 |
| <i>Robotics: Science and Systems</i> Best System Paper Finalist | 2019 |
| <i>Robotics: Science and Systems</i> 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)