Zi **Wang**

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Education

2014 – 2020 **Ph.D.** Candidate in EECS, ***Massachusetts Institute of Technology*** Cambridge, MA
- Thesis: Robot Learning With Strong Priors. GPA: 5.0/5.0.
- Advisors: Prof. Leslie Pack Kaelbling and Prof. Tomás Lozano-Pérez.

2014 – 2016 **S.M.** in EECS, ***Massachusetts Institute of Technology*** Cambridge, MA
- Thesis: Optimization as Estimation with Gaussian Process Bandits. GPA: 5.0/5.0.
- Advisors: Prof. Stefanie Jegelka and Prof. Leslie Pack Kaelbling.

2010 – 2014 **B.Eng.** in Computer Science and Technology, ***Tsinghua University*** Beijing, China
- Thesis: Fast Dropout Training for Deep Neural Networks (in Chinese). GPA: 92/100; class rank: 2/129.
- Advisors: Prof. Fei Sha and Prof. Jun Zhu.

Professional Experience

2014 – now **Research Assistant**, *Learning and Intelligent Systems Group, CSAIL, MIT.* Cambridge, MA
- Developed integrated learning and planning frameworks to solve long-horizon robot manipulation problems.
- Designed practical algorithms for global optimization in high dimensions with large scale observations.

2019 Summer **Research Intern**, *Microsoft Research New England.* Cambridge, MA
- Researched and designed frameworks of interactive machine learning for Bayesian optimization.

Jul. - Aug. 2017 **Software Engineering Intern**, *Motion Planning Team @ Uber ATG.* Pittsburgh, PA
- Developed a decision making module that enables safe, reliable and intelligent motion planning for the autonomous Uber vehicles with Mike Phillips, David Bradley and Kalin Gochev.

Jun. - Jul. 2017 **Software Engineering Intern**, *Prediction Team @ Uber ATG.* Pittsburgh, PA
- Worked on trajectory predictions via statistical machine learning methods with Thi Nguyen, Vladan Radosavljevic and Nemanja Djuric and contributed to the code base for the self-driving fleet of Uber.

2013 – 2014 **Research Assistant**, *Theoretical and Empirical Data Sciences Group, USC.* Los Angeles, CA
- Derived and implemented a fast training algorithm with regularizer for neural nets via noise marginalization.
- Developed a discriminative non-negative matrix factorization algorithm for speech separation.

2013 – 2014 **Research Assistant**, *State Key Lab of Intelligent Tech. & Systems, Tsinghua.* Beijing, China
- Researched scalable inference algorithms for correlated/dynamic topic models, and created visualizations.

2012 – 2013 **Research Assistant**, *Future Internet Technology Sub-interest Group, Tsinghua.* Beijing, China
- Researched matrix factorization and random forest for movie recommendation for Baidu Inc.

Leadership and Service

Co-president of Graduate Women in Course 6 (GW6) in 2016.
Co-organizer of Machine Learning Across MIT 2018-2019.
Reviewer of JMLR, IEEE T-RO, NeurIPS, ICML, AIStats, ICLR, AAAI, UAI, IROS.
Research supervisor of 9 undergraduate, MEng and visiting students at MIT.
Teaching Assistant of 6.883 Advanced Machine Learning, MIT, 2015.

Selected Publications

Z. Wang, C. R. Garrett, J. Mao, K. Chen, S. Thompson, A. LaGrassa, N. Gothoskar, I. Jutamulia, J. Xu, L. P. Kaelbling, T. Lozano-Pérez. **Learning for task and motion planning**. *In preparation.*

B. Kim, **Z. Wang**, L. P. Kaelbling, T. Lozano-Pérez. **Learning to guide task and motion planning using score-space representation**. *International Journal of Robotics Research (IJRR), 2019.*

V. Xia*, **Z. Wang***, K. Allen, T. Silver, L. P. Kaelbling. **Learning sparse relational transition models**. *International Conference on Learning Representations (ICLR), 2019.*

Z. Wang*, B. Kim*, L. P. Kaelbling. **Regret bounds for meta Bayesian optimization with an unknown Gaussian process prior**. *Advances in Neural Information Processing Systems (NeurIPS), 2018. Spotlight talk (3.5% acceptance rate).*

Z. Wang, C. R. Garrett, L. P. Kaelbling, T. Lozano-Pérez. **Active model learning and diverse action sampling for task and motion planning**. *International Conference on Intelligent Robots and Systems (IROS), 2018.*

Z. Wang, C. Gehring, P. Kohli, S. Jegelka. **Batched large-scale Bayesian optimization in high-dimensional spaces**. *International Conference on Artificial Intelligence and Statistics (AIStats), 2018.*

Z. Wang, S. Jegelka. **Max-value entropy search for efficient Bayesian optimization**. *International Conference on Machine Learning (ICML), 2017.*

Z. Wang*, C. Li*, S. Jegelka, P. Kohli. **Batched high-dimensional Bayesian optimization via structural kernel learning**. *International Conference on Machine Learning (ICML), 2017.*

Z. Wang, S. Jegelka, L. P. Kaelbling, T. Lozano-Pérez. **Focused model-learning and planning for non-Gaussian continuous state-action systems**. *IEEE Conference on Robotics and Automation (ICRA), 2017.*

Z. Wang, B. Zhou, S. Jegelka. **Optimization as estimation with Gaussian processes in bandit settings**. *International Conference on Artificial Intelligence and Statistics (AIStats), 2016. Oral presentation (6% acceptance rate).*

Z. Wang, F. Sha. **Discriminative non-negative matrix factorization for single-channel speech separation**. *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2014.*

J. Chen, J. Zhu, **Z. Wang**, X. Zheng, B. Zhang. **Scalable inference for logistic-normal topic models**. *Neural Information Processing Systems (NIPS), 2013.*

Honors and Awards

2019	Robotics: Science and Systems (RSS) Pioneers 2019.	Freiburg, Germany
2019	MIT Graduate Women of Excellence 2019.	Cambridge, MA
2018	Rising Stars in Electrical Engineering & Computer Science 2018.	Cambridge, MA
2014-2015	Greater China Computer Science Fellowship, *MIT.*	Cambridge, MA
Jul. 2014	Outstanding Graduates Award, *Tsinghua.*	Beijing, China
Nov. 2013	Science and Innovation Scholarship, *Tsinghua.*	Beijing, China
Sep. 2013	Anita Borg Scholarship, *Google China.*	Beijing, China

Skills and Others

Most experienced (>5 years) with Python, Matlab and LaTeX.

Some experience (>2 years) with ROS, Java, C/C++, JavaScript, HTML.

Languages: Chinese (native), English (fluent), Japanese (beginner).