

Guodong Zhang

University of Toronto
Department of Computer Science
Machine Learning Group

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RESEARCH INTERESTS

My research interests lie in the intersection of Bayesian modeling and deep learning, with a focus on Bayesian neural networks and variational inference. I'm particularly interested in developing scalable and flexible uncertainty models. Beyond that, I'm also working on optimization and generalization in deep learning.

EDUCATION

Ph.D. Student, University of Toronto Sep. 2017 - present

- Machine learning group, computer science
- Advisor: Roger Grosse

B.Eng., Information Engineering, Zhejiang University, China Aug. 2013 - Jun. 2017

- Minor: Advanced Class of Engineering Education, Chu-Kochen Honors College.
*Honored minor for selected **top 40** students with leadership and research capacity from about 2300 engineering students in Zhejiang University.*
- GPA: 3.96/4.0, Rank **1/182** (Three consecutive year)

Research Intern, University of California, Los Angeles Summer 2016

- Cross-disciplinary Scholars in Science and Technology (CSST)
- Advisor: Song-Chun Zhu and Ying Nian Wu
- Project: Generative ConvNet (Details see Research Experience)
- GPA: 4.0/4.0

PUBLICATIONS

Journal

- **Guodong Zhang**, Xiaojin Gong. Non-Negative Matrix Co-factorization for Weakly Supervised Image Parsing. *IEEE SIGNAL PROCESSING LETTERS*, 2016.

Conference

- **Guodong Zhang**, Chaoqi Wang, Roger Grosse. Three Mechanisms for Weight Decay Regularization. *Submitted to ICLR 2019*.
- Shengyang Sun*, **Guodong Zhang***, Jiaxin Shi*, Roger Grosse. Functional Variational Bayesian Neural Networks. *Submitted to ICLR 2019*.
- Yemin Wen, Kevin Luk, Maxime Gazeau, **Guodong Zhang**, Harris Chan, Jimmy Ba. Exploring Curvature Noise in Large-Batch Stochastic Optimization. *Submitted to ICLR 2019*.
- Juhan Bae, **Guodong Zhang**, Roger Grosse. Eigenvalue Corrected Noisy Natural Gradient. *Bayesian Deep Learning Workshop, NeurIPS 2018*.
- **Guodong Zhang***, Shengyang Sun*, David Duvenaud, Roger Grosse. Noisy Natural Gradient as Variational Inference. *International Conference on Machine Learning (ICML), 2018*.
- Shengyang Sun, **Guodong Zhang**, Chaoqi Wang, Wenyuan Zeng, Jiaman Li, Roger Grosse. Differentiable Compositional Kernel Learning for Gaussian Processes. *International Conference on Machine Learning (ICML), 2018*.
- Jifeng Dai*, Haozhi Qi*, Yuwen Xiong*, Yi Li*, **Guodong Zhang***, Han Hu, Yichen Wei. Deformable Convolutional Network. *International Conference on Computer Vision (ICCV), 2017*. (Oral).

Note: * above denotes equal contribution (co-first author).

WORK
EXPERIENCE

Research Intern, **Microsoft Research Asia**, Beijing

Nov. 2016 - Jun. 2017

- Visual Computing Group
- Mentor: Dr. Jifeng Dai
- Project: Object detection and recognition

OTHER
RESEARCH
EXPERIENCE

Machine Learning Group

University of Toronto, Canada

Model-based Reinforcement Learning

July. 2018 - present

- Improving the robustness of dynamic model and encouraging exploration of the agent using Bayesian Neural Networks.
- Benchmarking different model-based algorithms.

Center for Vision, Cognition, Learning, and Autonomy

UCLA, USA

A Fast Learning Algorithm for Generative ConvNet

Jul. 2016 - Sept. 2016

- Researched on energy-based generative models (Generative ConvNet).
- Modeled Generative ConvNet as Hopfield auto-encoder and learn via reconstruction.

SELECTED
HONORS AND
AWARDS

Scholarships & Honors

- CHU Kochen Scholarship, 2016
*Highest honor for only **top 12** student at Zhejiang University (**more than 20 thousand undergraduates**) in recognition of their overall excellence and contribution*
- Tang Lixin Scholarship, 2015
Among the 60 top students selected from all the students at Zhejiang University
- Cross-disciplinary Scholars in Science and Technology, UCLA, 2016
- National Scholarship in China (1.5%), 2014, 2015, 2016
- First-Class Scholarship for Outstanding Students (2%), 2014, 2015, 2016
- First Prize, Scholarship for Outstanding Merits (3%), 2014, 2015, 2016

Awards & Prizes

- Meritorious Winner, Interdisciplinary Contest in Modeling, Consortium for Mathematics and Its Application (ICM), 2016
- Honorable Winner, Mathematical Contest in Modeling, Consortium for Mathematics and Its Application (MCM), 2015
- 1st Prize, China Undergraduate Mathematical Contest in Modeling (1.5%) (CUMCM), 2015
- 1st Prize, Advanced Math Competition for Undergraduate, 2014
- 1st Prize, Physics Competition for Undergraduate, 2014

SERVICE

I am/was a reviewer for

- UAI 2018, NIPS 2018, ICLR 2019, ICML 2019

TEACHING

University of Toronto

I am/was a TA for

- CSC411: Introduction to Machine Learning (2018 Fall)
- CSC321: Introduction to Neural Networks and Machine Learning (2017 Winter)
- CSC384: Introduction to Artificial Intelligence (2017 Fall, 2018 Summer)