Kuan-Chieh Wang

Personal Information

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Research Interests

I'm interested in out-of-distribution detection, (deep) generative modelling, Bayesian modelling, and few-shot learning. In terms of application areas, I have worked on computer vision, speech recognition, and sports analytics.

Education

2016 - Present	Ph.D. (candidate), Dept. of Computer Science, **University of Toronto**, Toronto, Canada Advisor: Richard Zemel Thesis: Out-of-distribution Detection in Few-shot Learning (tentative)
2014 - 2016	M.Sc., Dept. of Computer Science, **University of Toronto**, Toronto, Canada Advisor: Richard Zemel Thesis: Classifying NBA Offensive Plays Using Neural Networks
2009 - 2014	B.ASc., Div. of Engineering Science, **University of Toronto**, Toronto, Canada Thesis: Automated Tuning of Neural Networks: Analysis of Hyperparameters Proposed by the Bayesian Optimization Framework

Publications

* below indicates equal contribution

1. Jens Behrmann*, Paul Vicol*, Kuan-Chieh Wang*, Roger B. Grosse, and Jörn-Henrik Jacobsen (2020)
   Understanding and mitigating exploding inverses in invertible neural networks
   (*preprint*)
2. Kuan-Chieh Wang, Paul Vicol, Eleni Triantafillou, and Richard Zemel (2020)
   "Few-shot Out-of-Distribution Detection"
   In: *ICML Workshop on Uncertainty and Robustness in Deep Learning*
   Spotlight
3. Will Grathwohl, Kuan-Chieh Wang, Jorn-Henrik Jacobsen, David Duvenaud, and Richard Zemel (2020)
   "Cutting out the Middle-Man: Training and Evaluating Energy-Based Models without Sampling"
   In: *ICML*
4. Will Grathwohl, Kuan-Chieh Wang*, Jörn-Henrik Jacobsen*, David Duvenaud, Mohammad Norouzi, and Kevin Swersky (2020)
   "Your classifier is secretly an energy based model and you should treat it like one"
   In: *ICLR*
   Oral
5. Kuan-Chieh Wang, Jixuan Wang, Khai Truong, and Richard Zemel (2019)
   "Customizable Facial Gesture Recognition For Improved Assistive Technology"
   In: *ICLR AI for Social Good Workshop*
6. Kuan-Chieh Wang*, Chia-Cheng Liu*, Paul Vicol, and Richard Zemel (2019)
   "Towards Few-Shot Out-of-Distribution Detection"
   In: *ICLR Safe Machine Learning Workshop*
7. Jonathan Shen, Patrick Nguyen, Yonghui Wu, Zhifeng Chen, Mia X Chen, Ye Jia, Anjuli Kannan, Tara Sainath, Yuan Cao, Chung-Cheng Chiu, et al. (2019)
   "Lingvo: a modular and scalable framework for sequence-to-sequence modeling"
   In: *Technical Report*
8. Jixuan Wang*, Kuan-Chieh Wang*, Marc T Law, Frank Rudzicz, and Michael Brudno (2019)
   "Centroid-based deep metric learning for speaker recognition"

In: *ICASSP*. IEEE, pp. 3652–3656

9. Kuan-Chieh Wang, Paul Vicol, James Lucas, Li Gu, Roger Grosse, and Richard Zemel (2018)
   "Adversarial distillation of Bayesian neural network posteriors"
   In: *ICML*
10. Thomas Kipf*, Ethan Fetaya*, Kuan-Chieh Wang, Max Welling, and Richard Zemel (2018)
    "Neural Relational Inference for Interacting Systems"
    In: *ICML*
11. Yujia Li, Alexander Schwing, Kuan-Chieh Wang, and Richard Zemel (2017)
    "Dualing GANs"
    In: *NeurIPS*, pp. 5606–5616
12. Kuan-Chieh Wang and Richard Zemel (2016)
    "Classifying NBA offensive plays using neural networks"
    In: *MIT Sloan Sports Analytics Conference*

Work Experience

Dec. 2018 Jun. 2018	**Research Intern**, Google Worked within Google Brain team with focus on speech recognition hosted by Chung-Cheng Chiu.
Jul. 2016 Jan. 2015	**Machine Learning Consultant**, SmartFinance LLC Researched data-driven techniques for merchant resolution (MR). Developed tools for MR components such as NLP-based merchant name cleanup, logo retrieval, and location resolution.
Aug. 2013 May. 2012	**Software Development Intern**, Broadcom Corporation Developed on the NFC stack and various downstream application components and was involved in designing new protocol/specs. Worked with software verification team to develop unit testing scripts using Perl/C++.

Awards and Honors

2017-2018	Bell Graduate Scholarship from *University of Toronto*
2014-2015	Mitacs Accelerate Grant with *University of Toronto & Toronto Raptors*
2011	Honorable Mention - Basic Science at *International Paediatric Radiology Conference*
2011	Dream of a Cure Studentship from *Canadian Hemophilia Society*
2009-2011	Queen Elizabeth II Aiming for the Top Scholarship

Teaching Experience

Sep. 2014 Present	**University of Toronto**, Toronto, Canada *Teaching Assistant* Courses: Programming on the Web, Computational Neuroscience, Eng. Sci. Thesis Mentor

Services

Conference Reviewer: NeurIPS (2019), ICML (2019,2020), ICLR (2019,2020)