Kuan-Chieh Wang

Website: https://wangkua1.github.io
Phone/Email: +1 6475514541/wangkua1@cs.toronto.edu
Mailing Address: Department of Computer Science
10 King's College Road, Rm. 3302, Toronto, Ontario M5S 3G4, CANADA

Research Interests

I'm interested in out-of-distribution detection, (deep) generative modelling, Bayesian modelling, few-shot/transfer learning, and domain generalization. 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 (2021)
"Understanding and mitigating exploding inverses in invertible neural networks"
In: *AISTATS*

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

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*
Spotlight

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 Sept. 2018	**Student Researcher**, Google, Toronto Canada Worked within Google Brain team (TOR) with focus on speech recognition with Chung-Cheng Chiu, and William Chan.
Sept. 2018 Jun. 2018	**Research Intern**, Google, Mountain View USA Worked within Google Brain team (MTV) with focus on speech recognition hosted by Chung-Cheng Chiu.
Jul. 2016 Jan. 2015	**Machine Learning Consultant**, SmartFinance LLC, NYC USA 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, San Diego USA 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

Talks

1. "Few-shot Out-of-Distribution Detection" at ICML Uncertainty in Deep Learning workshop 2020 link
2. "Customizable Facial Gesture Recognition For Improved Assistive Technology" at ICLR AI for Social Good Workshop 2020 link

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(Top Reviewer),2021), ICLR (2019,2020,2021(Reviewer Award), CVPR (2021)

Conference Volunteer: AISTATS (2021)