Kuan-Chieh (Jackson) Wang

Website: https://wangkua1.github.io
Phone/Email: +1 669-246-8724 / wangkua1@stanford.edu

Research Interests

My research revolves around the integration of generative capabilities into perception systems. Probabilistic generative models are well-suited for solving real-world problems where the model is required to *complete partial input* data (e.g., forecasting trajectory or 2D-to-3D lifting for 3D reconstruction). They also allow us to build more *robust and reliable* methods by better estimating the distribution of the input or the distribution of model parameters. My recent research contributions include **3D computer vision** and **open-world learning**.

Education

09/2016 - 11/2021	Ph.D., Dept. of Computer Science, **University of Toronto**, Toronto, Canada Advisor: Richard Zemel Thesis: Learning to Handle Inputs not from the Training Distribution
09/2014 - 06/2016	M.Sc., Dept. of Computer Science, **University of Toronto**, Toronto, Canada Advisor: Richard Zemel Thesis: Classifying NBA Offensive Plays Using Neural Networks
09/2009 - 06/2014	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

Work Experience

Present Nov. 2021	**Postdoc in CS**, Stanford University, Stanford, USA Working with professors Serena Yeung, C. Karen Liu, and Scott Delp.
Dec. 2018 Sept. 2018	**Student Researcher**, Google, Toronto Canada Worked within Google Brain team (TOR) with a 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 a 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++.

Publications

1. Jeffrey Gu, **Kuan-Chieh Wang**, and Serena Yeung (2023). "Generalizable Neural Fields as Partially Observed Neural Processes". In: *ICCV*
2. **Kuan-Chieh Wang**, Zhenzhen Weng, Maria Xenochristou, Joao Pedro Araujo, Jeffrey Gu, C Karen Liu, and Serena Yeung (2023). "NeMo: 3D Neural Motion Fields from Multiple Video Instances of the Same Action". In: *CVPR* (Highlight (∼2.5% of submissions))

3. Orr Zohar, **Kuan-Chieh Wang**, and Serena Yeung (2023). "PROB: Probabilistic Objectness for Open World Object Detection". In: *CVPR*
4. Yuhui Zhang, Jeff Z HaoChen, Shih-Cheng Huang, **Kuan-Chieh Wang**, James Zou, and Serena Yeung (2023). "DrML: Diagnosing and Rectifying Vision Models using Language". In: *ICLR*
5. Zhenzhen Weng, **Kuan-Chieh Wang**, Angjoo Kanazawa, and Serena Yeung (2022). "Domain Adaptive 3D Pose Augmentation for In-the-wild Human Mesh Recovery". In: *3DV*
6. Christina M Funke, Paul Vicol, **Kuan-Chieh Wang**, Matthias Kümmerer, Richard Zemel, and Matthias Bethge (2022). "Disentanglement and generalization under correlation shifts". In: *Conference on Lifelong Learning Agents*. PMLR, pp. 116–141
7. **Kuan-Chieh Wang**, Yan Fu, Ke Li, Ashish Khisti, Richard Zemel, and Alireza Makhzani (2021). "Variational Model Inversion Attacks". In: *NeurIPS*. vol. 34, pp. 9706–9719
8. Jixuan Wang, **Kuan-Chieh Wang**, Frank Rudzicz, and Michael Brudno (2021). "Grad2Task: Improved Few-shot Text Classification Using Gradients for Task Representation". In: *NeurIPS*. vol. 34, pp. 6542–6554
9. 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*
10. **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)
11. 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*
12. 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)
13. **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*
14. **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*
15. 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*
16. 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
17. **Kuan-Chieh Wang**, Paul Vicol, James Lucas, Li Gu, Roger Grosse, and Richard Zemel (2018). "Adversarial distillation of Bayesian neural network posteriors". In: *ICML*
18. Thomas Kipf*, Ethan Fetaya*, **Kuan-Chieh Wang**, Max Welling, and Richard Zemel (2018). "Neural Relational Inference for Interacting Systems". In: *ICML*
19. Yujia Li, Alexander Schwing, **Kuan-Chieh Wang**, and Richard Zemel (2017). "Dualing GANs". In: *NeurIPS* (Spotlight)
20. **Kuan-Chieh Wang** and Richard Zemel (2016). "Classifying NBA offensive plays using neural networks". In: *MIT Sloan Sports Analytics Conference*

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

Services

Conference Reviewer:
NeurIPS: 2019, 2021 (Top 8% Reviewer)
ICML 2019, 2020 (Top Reviewer), 2021
ICLR: 2019, 2020, 2021 (Reviewer Award)
CVPR: 2021

Conference Volunteer: AISTATS (2021)