Yiwei Yang

University of Washington

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Education

10/20 — Present **University of Washington**
Seattle, WA Ph.D. in Information Science
Research Interests: Fairness in Machine Learning - Surfacing and mitigating model biases
Advisor: Bill Howe

09/15 – 05/19 **University of Michigan**
Ann Arbor, MI B.S. in Computer Science and Engineering

Professional Experience

10/20 — Present **University of Washington**
Seattle, WA Graduate Student and Researcher

06/22 – 09/22 **SONY AI**
Remote Research Intern (Mentors: William Thong, Alice Xiang)

05/18 – 08/18 **IBM Research, Almaden**
San Jose, CA Research Intern (Mentors: Eser Kandogan, Prithviraj Sen, Yunyao Li)

Research Projects

02/22 — Present **Improving Robustness to Spurious Correlations with Concepts**
UW Introduced a framework that first uses out-of-distribution examples to infer group labels, then applies robust training methods with the inferred group labels to improve worst-group accuracy
Accepted to ICML SCIS 2023
In Submission to CVPR 2024

06/22 — 09/22 **Bias Propagation in Knowledge Distillation for Vision Models**
SONY AI Showed that fairness properties transfer from teacher to student model in knowledge distillation

05/22 — 11/22 **Surfacing Gender Bias of Vision-Language Models**
UW Showed that CLIP-based models tend to objectify women through a series of experiments (e.g. embedding association tests)
Preprint - https://arxiv.org/abs/2212.11261
Accepted to FAccT 2023

05/21 — 01/22 **Surfacing Relations between Distributive and Procedural and Fairness**
UW Designed a novel fairness loss term using feature attributions for procedural fairness and study how it interacts with distributive fairness
Accepted to HICSS 2024

Publications

P.10 **Y. Yang**, B. Howe. Does a Fair Model Produce Fair Explanations? Relating Distributive and Procedural Fairness. *In Proceedings of the 57th Hawaii International Conference on System Sciences, HICSS 2024, Hawaii, USA*.

P.09 **Y. Yang.**, A. Liu, R. Wolfe, A. Caliskan, B. Howe. Regularizing Model Gradients with Concepts to Improve Robustness to Spurious Correlations. *Fortieth International Conference on Machine Learning Workshop on Spurious Correlations, Invariance, and Stability (ICML SCIS 2023)*.

P.08 R. Wolfe, **Y. Yang**, B. Howe, A. Caliskan. Contrastive Lanugage-Vision AI Models Pretrained on Web-Scraped Multimodal Data Exhibit Sexual Objectification Bias. *In Proceedings of the ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT 2023). Chicago, USA*.

P.07 **Y. Yang.**, E. Kandogan, Y. Li, W.S.Lasecki, P.Sen. HEIDL: Learning Linguistic Expressions with Deep Learning and Human-in-the-Loop. *In Proceedings of the Association for Computational Linguistics (ACL 2019). Florence, Italy.*
(**Best Poster** at Michigan AI Symposium, 1/55)

P.06 **Y. Yang.**, E. Kandogan, Y. Li, W.S.Lasecki, P.Sen. A study on Interaction in Human-in-the-Loop Machine Learning for Text Analytics. *Joint Proceedings of the ACM IUI 2019 Workshops co-located with the 24th ACM Conference on Intelligent User Interfaces (ACM IUI 2019), Los Angeles, USA,* March 20, 2019.

P.05 A. Lundgard, **Y. Yang**, M.L. Foster, W.S. Lasecki. Bolt: Instantaneous Crowdsourcing via Just-in-Time Training. *In Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2018). Montreal, Canada*.

P.04 S.W. Lee, Y. Zhang, I. Wong, **Y. Yang**, S. D. O'Keefe, W.S. Lasecki. SketchExpress: Remixing Animations for More Effective Crowd-Powered Prototyping Of Interactive Interfaces. *In Proceedings of the ACM Symposium on User Interface Software and Technology (UIST 2017). Quebec City, Canada.*

P.03 H. Kaur, M. Gordon, **Y. Yang**, J. Teevan, E. Kamar, J. Bigham, W.S. Lasecki. CrowdMask: Using Crowds to Preserve Privacy in Crowd-Powered Systems via Progressive Filtering. *In AAAI Conference on Human Computation Demos (HCOMP 2017), Quebec City, Canada.*

P.02 Y. Chen, S.W. Lee, Y. Xie, **Y. Yang**, W.S. Lasecki, S. Oney. Codeon: On Demand Software Development Assistance. *In Proceedings of the International ACM Conference on Human Factors in Computing Systems (CHI 2017), Denver, USA.*

P.01 S. W. Lee, **Y. Yang**, S. Yan, Y. Zhang, I. Wong, Z. Yan, M. McGruder, C. M. Homan, W. S. Lasecki. Creating Interactive Behaviors in Early Sketch by Recording and Remixing Crowd Demonstrations. *In AAAI Conference on Human Computation Demos (HCOMP 2016), Austin, TX.*