Xindi (Cindy) Wu

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Education

Princeton University — *Princeton, NJ*
Ph.D. student, Computer Science Department, School of Engineering and Applied Science — *Aug. 2022 - Now*
Advisor: Olga Russakovsky

Carnegie Mellon University — *Pittsburgh, PA*
Master of Science in Computer Vision, Robotics Institute, School of Computer Science — *Aug. 2020 - Dec. 2021*
Advisor: Deva Ramanan

Xi'an Jiaotong University — *Xi'an, China*
Bachelor of Science in Computer Science, Honors Youth Program — *Sept. 2016- July 2020*
Advisors: Jinjun Wang & Pengju Ren

Award

ECCV 2024 Dataset Distillation Workshop Best Paper Award: Vision-Language Dataset Distillation. *Sept. 2024*

Publications & Preprints

[1] COMPACT: COMPositional Atomic-to-Complex Visual Capability Tuning
X. Wu*, H. S. Hwang*, P. Kirichenko, O. Russakovsky *Preprint 2025*

[2] ICONS: Influence Consensus for Vision-Language Data Selection
X. Wu, M. Xia, R. Shao, Z. Deng, PW Koh, O. Russakovsky *Preprint 2025*

[3] Actions as Language: Fine-Tuning VLMs into VLAs Without Catastrophic Forgetting
A. J. Hancock, **X. Wu**, L. Zha, O. Russakovsky, A. Majumdar *Preprint 2025*

[3] Explain Before You Answer: A Survey on Compositional Visual Reasoning
F. Ke, ..., **X. Wu**, ..., H. Rezatofighi *Preprint 2025*

[4] DD-Ranking: Rethinking the Evaluation of Dataset Distillation
Z. Li, ..., **X. Wu**, ..., K. Wang *Preprint 2025*

[5] Corgi: Cached Memory-Guided Video Generation
X. Wu, U. Singer, Z. Lin, A. Madotto, X. Xia, PA. Crook, YE. Xu, XL. Dong, S. Moon *WACV 2025*

[6] ConceptMix: A Compositional Image Generation Benchmark with Controllable Difficulty
X. Wu*, D. Yu*, Y. Huang*, O. Russakovsky, S. Arora *NeurIPS D&B 2024*

[7] Vision-Language Dataset Distillation
X. Wu, B. Zhang, Z. Deng, O. Russakovsky *TMLR 2024*

[8] SWE-bench Multimodal: Do AI Systems Generalize to Visual Software Domains?
J. Yang*, C. Jimenez*, ..., **X. Wu**, ..., O. Press *ICLR 2025*

[9] CharXiv: Charting Gaps in Realistic Chart Understanding in Multimodal LLMs
Z. Wang, ..., **X. Wu**, ..., D. Chen *NeurIPS D&B 2024*

[10] Language Models as Science Tutors
A. Chevalier,..., **X. Wu**,..., D. Chen *ICML 2024*

[11] Pix2Map: Cross-modal Retrieval for Inferring Street Maps from Images
X. Wu, K. Lau, F. Ferroni, A. Osep, D. Ramanan *CVPR 2023*

[12] Ego4D: Around the World in 3,000 Hours of Egocentric Video
K. Grauman,..., **X. Wu**,..., Jitendra Malik *CVPR 2022*

[13] Toward Learning Robust and Invariant Representations with Alignment Regularization and Data Augmentation
H. Wang, Z. Huang, **X. Wu** and EP. Xing *KDD 2022*

[14] CryoETGAN: Cryo-electron Tomography Image Synthesis Using Unpaired Image Translation
X. Wu, C. Li, H. Wei, H. Deng, J. Zhang and M. Xu *Frontiers in Physiology Computational Physiology and Medicine, 2022*

[15] Squared l2 Norm as Consistency Loss for Leveraging Augmented Data to Learn Robust and Invariant Representations
H. Wang, Z. Huang, **X. Wu** and EP. Xing *Arxiv 2021*

[16] Marrying Motion Forecasting and Offline Model-Based Reinforcement Learning for Self-Driving Cars
S. Pande and **X. Wu** *Preprint 2021*

[17] High Frequency Component Helps Explain the Generalization of Convolutional Neural Networks.
H. Wang, **X. Wu**, Z. Huang, EP. Xing *CVPR 2020*

[18] Transferable Adversarial Attacks on Deep Reinforcement Learning
X. Pan, Y. Cao, **X. Wu**, E. Zelikman, C. Xiao, Y. Sui, R. Chakraborty, RS. Fearing *Workshop on Adversarial ML at CVPR 2020*

[19] Reducing Exploitation of Data Idiosyncrasy Helps Robustify Trained Models
X. Wu, H. Wang, E. Zelikman, M. Xu and EP. Xing *Preprint 2020*

[20] Regularized Adversarial Training (RAT) for Robust Cellular Electron Cryo Tomograms Classification
X. Wu, Y. Mao, H. Wang, X. Zeng, X. Gao, EP. Xing, M. Xu *BIBM 2019*

[21] Template-based and Template-free Approaches in Cellular Cryo-electron Tomography Structural Pattern Mining.
X. Wu, X. Zeng, Z. Zhu, X. Gao and M. Xu *Computational Biology, Codon Publications, Brisbane, Australia, 2019*

[22] Deep Self-Paced Learning for Semi-supervised Person Re-identification Using Multi-View Self-Paced Clustering
X. Xin, **X. Wu**, Y. Wang, J. Wang *ICIP 2019*

[23] Multitask Learning With Enhanced Modules
Z. Zheng, Y. Wei, Z. Zhao, **X. Wu**, Z. Li and P. Ren *DSP 2018*

Experiences

NVIDIA, Spatial Intelligence Lab *Santa Clara, CA*
Research Scientist Intern w/ Prof. Sanja Fidler *May 2025 - Now*

Meta Reality Lab, Smart Glass AI Team *Redmond, WA*
Research Scientist Intern w/ Dr. Shane Moon *May 2023 - Aug. 2023*

Snap Inc., Perception Team *New York, NY*
Machine Learning Engineer *Feb. 2022 - Aug. 2022*

CMU Argo AI Center for Autonomous Vehicle Research *Pittsburgh, PA*
CMU Sponsered Capstone | Research Assistant w/ Prof. Deva Ramanan *Jan. 2021 - Jan. 2022*

Snap Inc., Perception Team *New York, NY*
Research Intern w/Dr. Alireza Zareian and Dr. Chen Wang *May 2021 - Aug. 2021*

Megvii Research (Face++) *Beijing, China*
Computer Vision Research Intern w/ Banghuai Li *June 2020 - Sept. 2020*

Talks and Poster Presentations

- From Data to Capability: Data for efficient multimodal machine learning *Datology AI Summer of Data Seminar, June 2025*
- ConceptMix: A Compositional Image Generation Benchmark with Controllable Difficulty *NeurIPS, Vancouver, Dec. 2024*
- Corgi: Cached Memory Guided Video Generation *ECCV AI for Visual Arts Workshop, Milan, Oct. 2024*
- Vision-Language Dataset Distillation *ECCV Dataset Distillation Workshop, Milan, Oct. 2024*
- ConceptMix: A Compositional Image Generation Benchmark with Controllable Difficulty *ECCV Knowledge in Generative Models Workshop, Milan, Oct. 2024*
- Compositional Generation Evaluation *Google Research, New York, July 2024*
- Scaling Down before Scaling Up: Recent Progress on Dataset Distillation *CVPRW Dataset Distillation, Seattle, June 2024*
- Corgi: Compositional Memory-Guided Video Generation *NYC Vision Day, New York, Nov. 2023*
- Pix2Map: Cross-modal Retrieval for Inferring Street Maps from Images *CVPR, Vancouver, June 2023*
- Regularized Adversarial Training for Robust Cellular Electron Cryo Tomograms Classification *BIBM, San Diego, Nov. 2019*

Professional Service

- **Organizer** - ICCV 25' Curated Data for Efficient Learning Workshop
- **Reviewer** - Neurips 25'/24'/23', ICLR 25'/24', ICML 25'/24', CVPR 25'/24'/23'/22', ICCV 25'/23', ECCV 24'/22', TMLR, ICRA 24', ACCV 24', ICLR 23' Workshop ME-FoMo, Neurips Interpolate Workshop 22', BMVC 20', IJCAI 20'
- **Committee Member** - Diversity, Equity and Inclusion Committee in Robotics Institute, CMU
- **Volunteer** - vGHC(Grace Hopper Celebration of Women in Computing) Volunteer 2021
- **Panelist** - Robotics Institute MS Student Panel, 2021, Robotics Institute Summer Scholars (RISS) program 2021
- **Co-Host** - Weekly RI Meets! 2021
- **Mentor** - CMU Society of Women Engineeers (SWE) mentoring program 2021

Teaching

- TA: COS 429 Computer Vision by Vikram V. Ramaswamy and Felix Heide *Princeton, Spring 2024*
- TA: COS 597O Advanced Topics in Computer Science: Deep Generative Models by Adji Bousso Dieng *Princeton, Fall 2023*