WEI WEI

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EDUCATION

2023	**Northwestern University**	*Evanston, IL*
	Ph.D. in Electrical Engineering	
	Advisor: Prof. Ying Wu	
2018	**Xi'an Jiaotong University**	*Xi'an, China*
	M.S. in Statistics	
	Advisor: Prof. Zongben Xu, Prof. Deyu Meng	
2015	**Xi'an Jiaotong University**	*Xi'an, China*
	B.S. in Mathematics Elite Class	
2013	**University of Connecticut**	*Storrs, CT*
	Visiting student in Department of Mathematics	

RESEARCH INTERESTS

Computer Vision & Machine Learning:

☐ Building a safe & secure ML model: adversarial robustness, out-of-distribution generalization.

☐ Learning with limited data: few-shot learning, meta-learning.

☐ Visual sensing & understanding: 2D/3D human pose estimation, object detection, action recognition.

☐ Image processing & low-level vision: visual quality enhancement under adverse weather imagery.

PROFESSIONAL EXPERIENCE

2018.09-present	Northwestern University	*Evanston, IL*
	Research Assistant at Computational Vision Lab.	
	Advisor: Prof. Ying Wu.	

2020.06-2020.09	Wormpex AI Research Research Intern at AI Research Institute. Mentor: Dr. Gang Hua.	*Bellevue, WA*
2019.06-2019.09	Horizon Robotics Inc. Research Intern at General AI Lab. Mentor: Dr. Wei Xu.	*Cupertino, CA*
2015.08-2018.07	Xi'an Jiaotong University Research Assistant at Machine Learning Group. Advisor: Prof. Deyu Meng.	*Xi'an, China*

PUBLICATIONS

Google Citation

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https://scholar.google.com/citations?user=BlApk24AAAAJ&hl=en
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Preprints

2023   **Wei Wei**, Jiahuan Zhou and Ying Wu. "Beyond Empirical Risk Minimization: Local Structure Preserving Regularization for Improving Adversarial Robustness." *arXiv preprint arXiv:2303.16861*, 2023.

2023   **Wei Wei**, Jiahuan Zhou, Hongze Li and Ying Wu. "ALUM: Adversarial Data Uncertainty Modeling from Latent Model Uncertainty Compensation." *arXiv preprint arXiv:2303.16866*, 2023.

2021   **Wei Wei**, Hao Kang, Li Guan, Yue Liu, Haoxiang Li, Ying Wu, Gang Hua."Beyond Visual Attractiveness: Physically Plausible Single Image HDR Reconstruction." *arXiv preprint arXiv:2103.12926*, 2021.

2021   **Wei Wei**, Haonan Yu, Haichao Zhang, Wei Xu and Ying Wu. "MetaView: Learning to View 3D Objects from Few Samples." *arXiv preprint arXiv:2103.04242*, 2021.

Published Papers

2022   Mingfu Liang, Jiahuan Zhou, **Wei Wei**, Ying Wu, "Balancing between Forgetting and Acquisition in Incremental Subpopulation Learning." *European Conference on Computer Vision* (**ECCV**), 2022.

2021   Lixuan Yi, Qian Zhao, **Wei Wei**, Zongben Xu. "Robust online rain removal for surveillance videos with dynamic rains." *Knowledge-Based Systems* (**KBS**), 2021.

2021   Lei Fan, Peixi Xiong, **Wei Wei**, and Ying Wu, "FLAR: A Unified Prototype Framework for Few-sample Lifelong Active Recognition." *IEEE International Conference on Computer Vision* (**ICCV**), 2021.

2019   **Wei Wei**, Deyu Meng, Qian Zhao, Zongben Xu and Ying Wu."Semi-supervised Transfer Learning for Image Rain Removal." *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2019.

2018	Minghan Li, Qi Xie, Qian Zhao, **Wei Wei**, Shuhang Gu, Jing Tao and Deyu Meng. "Video Rain Streak Removal By Multiscale Convolutional Sparse Coding." *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2018.
2017	**Wei Wei**, Liyuan Yi, Qi Xie, Qian Zhao, Deyu Meng and Zongben Xu. "Should We Encode Rain Streaks in Video as Deterministic or Stochastic?" *IEEE International Conference on Computer Vision* (**ICCV**), 2017.

RESEARCH PROJECTS

☐ **Ford-URP Program** 2019.09-2022.08
Title: Visual Occupant Sensing and Action Understanding for Proactive Passenger Safety
Role: Project Leader, cooperating with Ford Motor Inc. and Purdue University

- 2D human pose estimation
- Domain transfer in 2D human pose estimation
- 3D human pose estimation and tracking
- Classifying various human size types
- Understanding basic human status and actions
- System Integration

SERVICE

Conference Reviewer

☐ IEEE Conf. on Computer Vision and Pattern Recognition (CVPR), 2019∼now

☐ IEEE Int'l Conf. on Computer Vision (ICCV), 2019∼now

☐ European Conf. on Computer Vision (ECCV), 2020∼now

☐ International Conference on Learning Representations (ICLR), 2021∼now

☐ Neural Information Processing Systems (NeuIPS), 2021∼now

☐ International Conference on Machine Learning (ICML), 2022∼now

☐ Association for the Advancement of Artificial Intelligence (AAAI), 2020

☐ IEEE International Conference on Multimedia and Expo (ICME), 2020

☐ IEEE Winter Conference on Applications of Computer Vision (WACV), 2021∼2022

☐ Asian Conference on Computer Vision (ACCV), 2020

Journal Reviewer

☐ IEEE Transactions on Multimedia

☐ IEEE Transactions on Dependable and Secure Computing

☐ IEEE Access

☐ IEEE Signal Processing Letters

TEACHING EXPERIENCE

Fall 2022	ECE-332: Introduction to Computer Vision. Teaching Assistant. Northwestern University.
Fall 2016	Advanced Mathematical Statistics. Teaching Assistant. Xi'an Jiaotong University.

FELLOWSHIPS, AWARDS

2022	Terminal Year Fellowship, Northwestern University
2018	The Murphy Fellowship, Northwestern University
2018	Excellent Graduate Award, Xi'an Jiaotong University
2017	Philip K H Wong Foundation Fellowship, Xi'an Jiaotong University
2012	Siyuan Fellowship, Xi'an Jiaotong University

Updated May 2023