Wenqian Ye

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Research Interests

My research interest is to develop robust and interpretable machine learning methods. I am eager to persistently improve my understanding in diverse areas of study including but not limited to (1). AI Alignment, (2). Multimodal Learning, (3). AI for Healthcare, (4). Embodied AI.

Education

2023 – Now **PhD in Computer Science**, *School of Engineering and Applied Science*, University of Virginia.
Advisor: Aidong Zhang

2020 – 2022 **MS in Computer Science**, *Courant Institute of Mathematical Sciences*, New York University.
Concentration: Machine Learning

2017 – 2020 **BS in Mathematics**, University of Illinois Urbana-Champaign, High Distinction.
Advisor: Sanjay Patel
Minor in Computer Science and Electrical Engineering

Selected Publications

2024 **Xu Cao[†], Wenqian Ye[†], Kenny Moise, Megan Coffee**, *MpoxVLM: A Vision-Language Model for Diagnosing Skin Lesions from Mpox Virus Infection*, Accepted at ML4H 2024 Symposium.

2024 **Adibvafa Fallahpour, Mahshid Alinoori, Wenqian Ye, Xu Cao, Arash Afkanpour, Amrit Krishnan**, *EHRMamba: Towards Generalizable and Scalable Foundation Models for Electronic Health Records*, Accepted at ML4H 2024 Symposium.

2024 **Wenqian Ye, Guangtao Zheng, Yunsheng Ma, Xu Cao, Bolin Lai, James Rehg, Aidong Zhang**, *MM-SpuBench: Towards Better Understanding of Spurious Biases in Multimodal LLMs*, **Oral Presentation** at NeurIPS Workshop on Responsibly Building the Next Generation of Multimodal Foundational Models (NeurIPS-RBFM).

2024 **Yunsheng Ma, Xu Cao, Wenqian Ye, Can Cui, Kai Mei, Ziran Wang**, *Learning Autonomous Driving Tasks via Human Feedbacks with Large Language Models*, Conference on Empirical Methods in Natural Language Processing (EMNLP).

2024 **Guangtao Zheng, Wenqian Ye, Aidong Zhang**, *Benchmarking Spurious Bias in Few-Shot Image Classifiers*, European Conference on Computer Vision (ECCV).

2024 **Wenqian Ye, Guangtao Zheng, Xu Cao, Yunsheng Ma, Aidong Zhang**, *Spurious Correlations in Machine Learning: A Survey*, ICML Workshop on Data-Centric Machine Learning Research (ICML-DMLR).

2024 **Guangtao Zheng, Wenqian Ye, Aidong Zhang**, *Spuriousness-Aware Meta-Learning for Learning Robust Classifiers*, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD).

2024 **Guangtao Zheng, Wenqian Ye, Aidong Zhang**, *Learning Robust Classifiers with Self-Guided Spurious Correlation Mitigation*, International Joint Conference on Artificial Intelligence (IJCAI).

2024 **Xu Cao, Tong Zhou, Yunsheng Ma, Wenqian Ye, Can Cui, Kun Tang, Zhipeng Cao, Kaizhao Liang, Ziran Wang, James Rehg, Chao Zheng**, MAPLM: A Real-World Large-Scale Vision-Language Dataset for Map and Traffic Scene Understanding, *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*.

2024 **Yunsheng Ma, Can Cui, Xu Cao, Wenqian Ye, Peiran Liu, Juanwu Lu, Amr Abdelraouf, Rohit Gupta, Kyungtae Han, Aniket Bera, James Rehg, Ziran Wang**, LaMPilot: An Open Benchmark Dataset for Autonomous Driving with Language Model Programs, *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*.

2023 **Wenqian Ye, Yunsheng Ma, Xu Cao, Kun Tang**, Mitigating Transformer Overconfidence via Lipschitz Regularization, *Conference on Uncertainty in Artificial Intelligence (UAI)*.

2023 **Xu Cao[†], Wenqian Ye[†], Elena Sizikova, Xue Bai, Megan Coffee, Hongwu Zeng, Jianguo Cao** , ViTASD: Robust ViT Baselines for Autism Spectrum Disorder Facial Detection, *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*.

2023 **Yunsheng Ma, Wenqian Ye, Xu Cao, Amr Abdelraouf, Kyungtae Han, Rohit Gupta, Ziran Wang**, CEMFormer: Learning to Predict Driver Intentions from In-Cabin and External Cameras via Spatial-Temporal Transformers, *IEEE Intelligent Transportation Systems Conference (ITSC)*.

2023 **Wenqian Ye[†], Yunsheng Ma[†], Xu Cao** , Uncertainty Estimation in Deterministic Vision Transformer , *AAAI Workshop on Uncertainty Reasoning and Quantification in Decision Making (UDM-AAAI)*.

Industrial Experience

2023 – Now **Adjunct Researcher**, *NYU Langone Health*, New York University.
Conducting research on Artificial Intelligence-enabled diagnosis of Tuberculosis and COVID-19 using radiologic imaging in resource-constrained environments. Additionally, developing an AI algorithmic framework for screening Monkeypox using dermatologic images.

2022 – 2023 **Software Engineer**, *Cirrus Logic Inc*.
Performed comprehensive validation and testing of embedded software for audio and haptics applications, focusing on automation and analysis. Contributed to both internal and customer-facing UI design, while executing system-level testing across device drivers, firmware, and UI software. Developed prototypes of DSP algorithms using Python/Matlab and implemented fixed-point firmware using C/C++.

2022 – Now **Co-Founder & Principal Scientist**, *PediaMedAI Lab*.
Enhancing pediatric healthcare by deploying interpretable AI models designed to support pediatricians in diagnosing and intervening early in pediatric diseases.

Fellowships & Grants

2024 OpenAI Researcher Access Program

2023 UAI Scholarship Grant

2023 AAAI Scholarship Grant

2023 UVA Computer Science Fellowship

Teaching Experience

Fall 2024 **CS 6316: Machine Learning**, *Prof. Aidong Zhang*, University of Virginia.
Invited Lecture on the topic of Spurious Correlations in Machine Learning.

Fall 2024 **CS 4501: Natural Language Processing**, *Prof. Yu Meng*, University of Virginia.
- Designed coding/conceptual assignments for the course contents.
- Graded assignments and provided detailed feedback.
- Led weekly office hours and actively supported students on Piazza.

Fall 2021	**CSCI-GA 2590: Natural Language Processing**, *Prof. He He*, New York University.
	○ Graded assignments, exams, and final projects.
	○ Developed the autograder for coding assignments.
	○ Led office hours and supported students on CampusWire.

Services

Organizer	**Chair**.
	LLVM-AD Workshop (WACV 2024; ITSC 2024; WACV 2025)
	Roundtable Junior Chair, *Health AI in Low-and middle-income Countries*.
	ML4H 2024
Reviewer & PC Member	**Journals**.
	IEEE IoT-J; IEEE IJHCI; IEEE T-IV; IEEE VTM; IEEE Internet Computing
	Conferences.
	AISTATS(2025); ICLR(2025); NeurIPS(2024); KDD(2024,2025); CVPR(2024); ECCV(2024); AAAI(2023,2025); IJCAI(2024); ICML(2022); ICASSP(2023, 2024); MICCAI(2024); ISBI(2024); ACML(2024)
	Workshops.
	DMLR(ICML); MLSP; VTTA(NeurIPS); NIVIT(ICCV); UDM(AAAI, KDD)
Membership	**Member**.
	IEEE; ACM; IEEE SPS
Mentorship	**Mentor**.
	ML4H(2023, 2024)

Technical Skills

Languages	Python, C/C++, R, MATLAB, Golang, SystemVerilog, LaTeX
Packages	PyTorch, TensorFlow, Scikit-learn, Huggingface, LangChain
Others	AWS, CUDA, SQL, Git, Jenkins