

Wengqian Ye

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.
Thesis Advisor: Sanjay Patel
Minor in Computer Science and Electrical Engineering

Selected Publications († denotes co-first authors)

- 2025 **Wengqian Ye, Guangtao Zheng, Aidong Zhang**, *Improving Group Robustness on Spurious Correlation via Evidential Alignment*, Accepted at ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD).
- 2025 **Guangtao Zheng, Wengqian Ye, Aidong Zhang**, *NeuronTune: Towards Self-Guided Spurious Bias Mitigation*, Accepted at International Conference on Machine Learning (ICML).
- 2025 **Guangtao Zheng, Wengqian Ye, Aidong Zhang**, *ShortcutProbe: Probing Prediction Shortcuts for Learning Robust Models*, Accepted at International Joint Conference on Artificial Intelligence (IJCAI).
- 2024 **Wengqian 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.
- 2024 **Wengqian Ye, Guangtao Zheng, Xu Cao, Yunsheng Ma, Aidong Zhang**, *Spurious Correlations in Machine Learning: A Survey*, ICML Workshop on Data-Centric Machine Learning Research.
- 2024 **Guangtao Zheng, Wengqian Ye, Aidong Zhang**, *Benchmarking Spurious Bias in Few-Shot Image Classifiers*, European Conference on Computer Vision (ECCV).
- 2024 **Guangtao Zheng, Wengqian Ye, Aidong Zhang**, *Spuriousness-Aware Meta-Learning for Learning Robust Classifiers*, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD).
- 2024 **Guangtao Zheng, Wengqian Ye, Aidong Zhang**, *Learning Robust Classifiers with Self-Guided Spurious Correlation Mitigation*, International Joint Conference on Artificial Intelligence (IJCAI).
- 2024 **Xu Cao[†], Wengqian Ye[†], Kenny Moise, Megan Coffee**, *MpoxVLM: A Vision-Language Model for Diagnosing Skin Lesions from Mpox Virus Infection*, Machine Learning for Health Symposium (ML4H).

- 2024 **Adibvafa Fallahpour, Mahshid Alinoori, Wenqian Ye, Xu Cao, Arash Afkanpour, Amrit Krishnan**, *EHRMamba: Towards Generalizable and Scalable Foundation Models for Electronic Health Records*, Machine Learning for Health Symposium (ML4H).
- 2024 **Yunsheng Ma, Xu Cao, Wenqian Ye, Can Cui, Kai Mei, Ziran Wang**, *Learning Autonomous Driving Tasks via Human Feedbacks with Large Language Models*, Findings in Conference on Empirical Methods in Natural Language Processing (EMNLP Findings).
- 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)*.

Professional Experience

- 2025 Summer **Applied Scientist Intern**, Amazon Agentic AI.
- 2023 – Now **Graduate Research Assistant**, University of Virginia.
Conduct research on improving robustness and alignment of machine learning models, particularly in vision and language. Publish research in top AI and data mining conferences, and develop open-source tools.
- 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++.

Fellowships & Grants

- 2024 OpenAI Researcher Access Program
- 2023 UAI Scholarship Grant
- 2023 AAAI Scholarship Grant
- 2023 UVA Computer Science Fellowship

Teaching Experience

- Spring 2025 **CS 4501/6501: Analyzing Online Behavior for Public Health**, *Prof. Henry Kautz*, University of Virginia.
- Graded assignments, projects and provided detailed feedback.
 - Led weekly office hours and actively supported students on Canvas.
- Fall 2024 **CS 6316: Machine Learning**, *Prof. Aidong Zhang*, University of Virginia.
Guest 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 Canvas.
- 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);
Workshop on AI for Children, AI4CHL (ICLR 2025);
Workshop on Distillation of Foundation Models for Autonomous Driving, WDFM-AD (CVPR 2025)
- Roundtable Chair.**
ML4H 2024
- Program **Journals.**
Committee IEEE IoT-J; IEEE IJHCI; IEEE T-IV; IEEE VTM; IEEE Internet Computing
- Conferences.**
ICML; ICLR; NeurIPS; KDD; CVPR; ECCV; ICCV; AAAI; IJCAI; AISTATS; ICASSP; MICCAI; ISBI; ACML
- 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