# 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.

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## 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: Bayesian Machine Learning

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

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## Selected Publications

### Under Review († denotes co-first authors)

**2024**  **Wenqian Ye, Guangtao Zheng, Aidong Zhang**, *Learn from Known Unknowns: A Unified Empirical Bayesian Framework for Improving Group Robustness.*
Under Review

**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.*
Under Review

### In Proceedings / Accepted († denotes co-first authors)

**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 (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 ($3500)

**2023** UAI Scholarship Grant

**2023** AAAI Scholarship Grant

**2023** UVA Computer Science Fellowship

## Teaching Experience

**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 T-IV; IEEE VTM; IEEE Internet Computing

**Conferences**.
AISTATS(2025); ICLR(2025); NeurIPS(2024); KDD(2024,2025); CVPR(2024); ECCV(2024); AAAI(2023); 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, PyTorch Lightening, Huggingface, Scikit-learn

Others AWS, CUDA, MySQL, Git, Jenkins