

YUNSHENG MA

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EDUCATION

Purdue University Ph.D., Research Field : Autonomous Driving, Transportation Engineering	West Lafayette, IN Jan. 2023 – Present
New York University Master of Science, Computer Science	New York, NY Sep. 2020 – May 2022
Harbin Institute of Technology Bachelor of Engineering, Computer Software Engineering	Weihai, China Sep. 2016 – May 2020
University of California, Berkeley Visiting Students, Electrical Engineering and Computer Sciences	Berkeley, CA Aug. 2018 – May 2019

PUBLICATIONS

Papers Under Review (*denotes co-first authors)

- Y. Ma**, J. Lu, C. Cui, S. Zhao, X. Cao, W. Ye, Z. Wang. "MACP: Efficient Model Adaptation for Cooperative Perception." 2023
- Y. Ma**, R. Du, A. Abdelraouf, K. Han, R. Gupta, and Z. Wang. "Driver Digital Twin for Online Recognition of Distracted Driving Behaviors." 2023
- C. Cui*, **Y. Ma***, X. Cao, W. Ye, Z. Wang. "Receive, Reason, and React: Drive as You Say with Large Language Models in Autonomous Vehicles." 2023

In Conference Proceedings (*denotes co-first authors)

- Y. Ma**, W. Ye, X. Cao, A. Abdelraouf, K. Han, R. Gupta, Z. Wang. "CEMFormer: Learning to Predict Driver Intentions from In-Cabin and External Cameras via Spatial-Temporal Transformers." *IEEE 26th International Conference on Intelligent Transportation Systems (ITSC)*, 2023.
- C. Cui, **Y. Ma**, J. Lu, Z. Wang. "Radar Enlighten the Dark: Enhancing Low-Visibility Perception for Automated Vehicles with Camera-Radar Fusion." *IEEE 26th International Conference on Intelligent Transportation Systems (ITSC)*, 2023.
- Y. Ma**, L. Yuan, A. Abdelraouf, K. Han, R. Gupta, Z. Li, Z. Wang. "M2DAR: Multi-View Multi-Scale Driver Action Recognition With Vision Transformer." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2023.
- L. Yuan, **Y. Ma**, L. Su, Z. Wang. "Peer-to-Peer Federated Continual Learning for Naturalistic Driving Action Recognition." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2023.
- W. Ye, **Y. Ma**, X. Cao, K. Tang. "Mitigating Transformer Overconfidence via Lipschitz Regularization." In *Proceedings of the Thirty-Ninth Conference on Uncertainty in Artificial Intelligence (UAI)*, 2023.
- S. Zhao*, **Y. Ma***, Y. Gu, J. Yang, T. Xing, P. Xu, R. Hu, H. Chai, and K. Keutzer. "An End-to-End Visual-Audio Attention Network for Emotion Recognition in User-Generated Videos." In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, 2020, **Oral Presentation**.

Workshop Presentations (*denotes co-first authors)

- W. Ye*, **Y. Ma***, Xu Cao. "Uncertainty Estimation in Deterministic Vision Transformer." AAAI Workshop on Uncertainty Reasoning and Quantification in Decision Making (**UDM-AAAI**), 2023.
- Y. Ma**, Z. Wang. "ViT-DD: Multi-Task Vision Transformer for Semi-Supervised Driver Distraction Detection." NeurIPS Workshop on Machine Learning for Autonomous Driving (**NeurIPS ML4AD**), 2022.

WORK EXPERIENCE

Digital Twin Lab, Purdue University Research Assistant	Aug. 2022 – Present Advised by Dr. Ziran Wang
Didi Chuxing Research Engineer Intern	June 2019 – Sep. 2019 Advised by Dr. Pengfei Xu

RESEARCH EXPERIENCE

Courant Institute of Mathematical Sciences, NYU
Bayesian Machine Learning Course Project

Sep. 2021 – May 2022
Advised by [Dr. Andrew Gordon Wilson](#)

University of California, Berkeley
Undergraduate Research Intern

Sep. 2018 – May 2019
Advised by [Dr. Sicheng Zhao](#)

TEACHING EXPERIENCE

NYU CSCI-GA.3033 Design and Analysis of Algorithms
Teaching Assistant

Spring 2021
Instructor: Prof. Manuel Charlemagne

PROFESSIONAL ACTIVITIES

As a Workshop/Challenge Organizer

Co-Chair of the 2024 *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 1st Workshop on Large Language and Vision Models for Autonomous Driving (LLVM-AD), Waikoloa, Hawaii.

Co-Organizer of the MAPLM Challenge: A Large-Scale Vision-Language Benchmark for Map and Traffic Scene Understanding.

As a Reviewer

Reviewer of *IEEE Internet of Things Journal (IoT-J)*

Reviewer of *IEEE Transactions on Intelligent Vehicles (T-IV)*

Reviewer of *Workshop on Large Language and Vision Models for Autonomous Driving (LLVM-AD)* 2024

Reviewer of *ACM/IEEE International Conference on Cyber-Physical Systems (ICCPs)* 2023

Reviewer of *IEEE International Conference on Mobility: Operations, Services, and Technologies (MOST)* 2023

Reviewer of *International Conference on Machine Learning (ICML)* 2022

As a Volunteer

Volunteer of *Conference on Uncertainty in Artificial Intelligence (UAI)* 2023

Volunteer of *AAAI Conference on Artificial Intelligence (AAAI)* 2023

Assistant Moderator of *TRB Conference on Innovations in Travel Analysis and Planning* 2023

Webmaster of *IEEE Technical Committee on Internet of Things in Intelligent Transportation System* 2022 – Present

FELLOWSHIPS & AWARDS

Conference on Next-Generation Transportation Systems, *Outstanding Speaker Award* 2023

AAAI Student Scholarship Grant 2023

NeurIPS ML4AD Travel Grant, sponsored by Waymo 2022

TECHNICAL SKILLS

Programming: Python, C/C++

Packages: PyTorch/Tensorflow, Lightening, Hugging-Face, LangChain, OpenAI-Gym, OpenCV

Tools: Git, \LaTeX , SQL