Mellon M. Zhang

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Mellon (Meilong) Zhang | meilongzhang | Mellon M. Zhang | meilongzhang

Atlanta, Georgia - Citizenship: US

Research Interests

My research focuses on enabling reliable real-world deployment of perception-driven robotic systems and foundation models. I work across three areas: real-time inference and latency coordination, world modeling and spatiotemporal reasoning, and closed-loop uncertainty-aware perception–action systems. My current interests include end-to-end (E2E) networks and vision-language-action (VLA) models for robotics and autonomous driving.

Education

- **Georgia Institute of Technology** — *Aug 2023 - Current*
  Ph.D. in Machine Learning, advised by Prof. Glen Chou — Atlanta, USA
- **University of California, Berkeley** — *Aug 2019 - May 2023*
  B.A. in Computer Science — Berkeley, USA

Papers

*=Equal Contribution, C=Conference, W=Workshop, S=In Submission, P=In Preparation

[S.2] C. Huang*, M. M. Zhang*, R. Azarcon, G. Chou, and Z. Kira. **MAPS: Preserving Vision-Language Representations via Module-Wise Proximity Scheduling for Better Vision-Language-Action Generalization**. 2025. *Under review.*

[C.1] M. M. Zhang, G. Chou, and S. Mukhopadhyay. **Towards Streaming LiDAR Object Detection with Point Clouds as Egocentric Sequences**. In *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2026. [pdf]

[W.1] M. M. Zhang and G. Chou. **Polar Hierarchical Mamba**. In *Workshop on 4D Vision: Modeling the Dynamic World @ CVPR*, 2025. [pdf]

[S.1] M. M. Zhang, H. Kumawat, and S. Mukhopadhyay. **DFDNet: Directional Feature Diffusion for Efficient Fully-Sparse LiDAR Object Detection**. 2024. *Under review.* [pdf]

[P.1] M. M. Zhang. **spkan: Sparse Convolutions with Kolmogorov-Arnold Networks**, 2024. *In preparation.* [github]

Experience

- **Trustworthy Robotics Lab** — *Jul 2025 - Current*
  Graduate Research Assistant - Advisor: Prof. Glen Chou — Atlanta, USA
  ◦ Projects: Vision-language-action models, autonomous driving, 3D perception.
- **Gigascale Reliable Energy-Efficient Nanosystem Lab** — *Aug 2023 - Jul 2025*
  Graduate Research Assistant - Advisor: Prof. Saibal Mukhopadhyay — Atlanta, USA
  ◦ Projects: Efficient perception
- **Knight Lab** — *Aug 2021 - May 2023*
  Undergraduate Research Assistant - Advisor: Prof. Robert Knight — Berkeley, USA
  ◦ Projects: LLM interpretability

Honors and Awards

- **Lambda Labs Research Grant** — *Jul 2025*
  Compute funding for research on active uncertainty mitigation in autonomous driving.
- **UC Berkeley Rose Hills Fellowship** — *May 2022*
  Merit-based fellowship for independent summer research funding. One of 45 recipients selected university-wide.
- **Georgia Tech SURE Fellowship** — *May 2021*
  Merit-based summer research internship. One of 50 recipients selected nationally.

Service and Teaching

- **Teaching**: Graduate Teaching Assistant, AE 2610 Intro Experimental Methods in Aerospace, Fall 2025
- **Program Committee**: CoRL ('25)
- **Project ENGAGES**, one-on-one research mentorship with high school student from Atlanta area. *2025-2026*
- **Computer Science Mentors**, undergraduate tutor for CS61B: Data Structures *2020-2022*

Skills

- **Programming:** Python (PyTorch, Tensorflow, Scikit-learn etc.), C++, CUDA, LaTeX, Java, Javascript, C, RISC-V
- **Development:** Linux, bash, Git, SLURM, HPC