Mellon M. Zhang

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

Atlanta, Georgia - Citizenship: US

RESEARCH INTERESTS

My research aims to improve the reliability and trustworthiness of perception-based robotic algorithms and foundation models in safety-critical and dynamic scenarios. I am particularly interested in multimodal and spatiotemporal reasoning, vision-language-action models (VLAs), and video understanding (Vid-LLMs).

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
C=CONFERENCE, W=WORKSHOP, S=IN SUBMISSION, P=IN PREPARATION

[S.2] M. M. Zhang, G. Chou, and S. Mukhopadhyay. **Polar Hierarchical Mamba: Streaming LiDAR Object Detection with Point Clouds as Egocentric Sequences**, 2025. *Under review.* [pdf]

[W.1] M. M. Zhang and G. Chou. **Towards Streaming LiDAR Object Detection with Point Clouds as Egocentric Sequences**, 2025. *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: 3D perception (LiDAR), Foundation model reliability (VLA, VLM, Vid-LLM)

• **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