

# Resume: Jialeng Ni

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## EDUCATION

### University of Michigan

Master of Science in Robotics

Ann Arbor, MI

08/2025-present

### University of Michigan

Bachelor of Science in Computer Science and Engineering

Ann Arbor, MI

08/2023-05/2025

GPA: 3.90/4.0 Honors: Summa Cum Laude | Jackson and Muriel Lum Undergraduate Scholarship

### Shanghai Jiao Tong University

Shanghai, China

Bachelor of Science in Electrical and Computer Engineering

09/2021-08/2025

GPA: 3.81/4.0 Honors: Distinguished Graduate | Undergraduate Outstanding Scholarship | Excellent Student Volunteer 2022

## WORK EXPERIENCE

### InternManip: All-in-one manipulation learning framework

[Code](#)

[Challenge](#)

Shanghai, China

Research Intern | OpenRobotLab, Shanghai Artificial Intelligence Lab

05/2025-08/2025

- Developed a unified framework that spans diverse robotics manipulation policies (e.g., ACT, DP, Pi-0, GR00T-N1/1.5), robot morphologies (Franka, bimanual AgileX Piper arm), multiple training datasets, and mainstream benchmarks (e.g., GenManip-v1, Calvin, Simpler-Env).
- Integrated language-conditioned Diffusion Policy and standardized evaluation with GR00T-N1.5 and pi-0 VLA baselines.
- Co-organized the IROS 2025 Challenge on Multimodal Robot Learning in InternUtopia and Real World.

## RESEARCH EXPERIENCE

### Touch-Aware Multimodal Robotic Manipulation with Magnetic Tactile Sensors

Shanghai, China

Bachelor's Thesis | UM-SJTU Joint Institute, Shanghai Jiao Tong University

05/2025-08/2025

- Proposed a modular “6+1” touch-aware manipulation framework that decouples gripper intelligence from 6DoF arm planning, permitting high-frequency tactile feedback loops while maintaining computationally efficient arm motion planning.
- Designed a wearable visuo-tactile data collection device for intuitive fingertip demonstrations, and fused them with on-robot teleoperation data to train a robust, scalable gripper control model.
- Controlled by a deep learning visuo-tactile model, the gripper was validated on a Realman arm–grripper platform, safely handling fragile and deformable objects, including paper clip, grapes and etc., show the ability to sense object differences and adjust gripping force accordingly.

### NeuralMetric: Transformer-Based Safety Metric for Autonomous Driving

Ann Arbor, MI

Mcity, University of Michigan

02/2024-09/2024

- Proposed NeuralMetric, a Transformer-based evaluation model that learned directly from historical trajectories to capture potential collision risk, addressed the limitations of heuristic-driven and latency-prone traditional safety metrics.
- Constructed three large-scale simulation datasets with realistic accident distributions, and addressed extreme class imbalance through weighted loss functions and sampling strategies, significantly improving detection of rare but critical safety events.
- Validated the end-to-end framework across highways, intersections, and roundabouts, achieving state-of-the-art predictive accuracy and enabling real-time deployment (2 ms on GPU / 76 ms on CPU, 100 – 1000 × faster than prior methods).

Publications: [1] X. Yan, H. Sun, J. Ni, H. Zhu, S. Feng, and H. Liu, "NeuralMetric: An Accurate and Efficient Real-time Safety Metric for Automated Driving Systems" Under Review at the 26th International Symposium on Transportation and Traffic Theory

### Ablation Study on Tri-Perspective View on Plane Configurations

[Code](#)

[Report](#)

[Poster](#)

Ann Arbor, MI

Robotics, University of Michigan

10/2024-12/2024

- Conducted an ablation study on the Tri-Perspective View (TPV) for 3D semantic occupancy prediction on Panoptic nuScenes datasets. Achieved an 48% mIoU on semantic occupancy prediction task with two-plane setups, as compared to 40% in traditional TPV.
- Demonstrated that two-plane configurations are sufficient for effective visual-based occupancy prediction.

## SKILLS

Language: Mandarin (Native), English

Programming Languages: Python (Proficient), C++/C (Familiar)

Frameworks & Tools: PyTorch, Isaac Sim, SUMO, Slurm