Xiaokang Sun

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EDUCATION

Georgia Institute of Technology **August 2025 - Present**
M.S. in Computer Science *Atlanta, U.S.*

- **Research Interests**: Robot Learning, Planning and Control.

Tsinghua University **September 2021 – June 2025**
B.Eng. in Automation *Beijing, P.R.China*

- **Award**: Tsinghua University Second Prize Scholarship for 2021 Freshmen.

WORK EXPERIENCE

Booster Robotics **June 2025 – August 2025**
Research Intern at Booster Lab *Beijing, P.R.China*

- Conducted a comprehensive survey of state-of-the-art control algorithms for humanoid trajectory tracking.
- Extended our existing reinforcement learning framework to support multi-objective learning capabilities.
- Reproduced the AMOR, which integrates Variational Movement Primitives (VMP) with adaptive reward weighting.

RESEARCH EXPERIENCE

Robot Soccer Strategy Learning via Heterogeneous MARL **March 2025 – May 2025**
Undergraduate Thesis, Advisor: Prof. Xiang Li *Tsinghua University (DA)*

- Built a structured heterogeneous MARL benchmark in the GRF environment to evaluate algorithms like HAPPO under reproducible settings and demonstrated performance gains in medium-scale heterogeneous tasks.
- Introduced attention-based communication and group-wise actor updates to improve coordination and role modeling.
- Extended and in submission as a conference paper, currently under review.

A Unified Benchmark for Occupancy Forecasting and Prediction **December 2024 – April 2025**
Research Assistant, Advisor: Prof. Jiachen Li *UC, Riverside (TASL)*

- Co-authored a paper (third author) accepted at *ICCV 2025*.
- Processed the OPV2V dataset and integrated semantic labels from COHFF for enhanced annotations.
- Computed forward/backward flow and converted the semantic-enhanced OPV2V into a unified format.

Visual-Tactile Fusion-Based Regrasping Policy Learning for Robot Arms **July 2024 – Nov 2024**
SRT Student, Advisor: Prof. Yao Jiang *Tsinghua University (ME)*

- Integrated visual and tactile perception for regrasping after failures on objects with different COM.
- Applied reinforcement learning for grasping skill acquisition and validated the approach in simulated environments.

Fine-tuned Sim-to-sim Framework for Mitigating Sim-to-real Problem **February 2024 – June 2024**
Research Assistant, Advisor: Prof. Jianyu Chen *Tsinghua University (IIIS)*

- Collaborated on validating policies with real humanoid robots to ensure robustness across different environments.
- Fine-tuned learned policies in a sim-to-sim framework to address sim-to-real transfer challenges.
- Conducted simulations in MuJoCo and Isaac Gym, refining models for better real-world performance.

PUBLICATIONS

[1] Yuping Wang, Xiangyu Huang, **Xiaokang Sun**, Mingxuan Yan, Shuo Xing, Zhengzhong Tu, Jiachen Li. "UniOcc: A Unified Benchmark for Occupancy Forecasting and Prediction in Autonomous Driving", in in *International Conference on Computer Vision (ICCV)*, 2025.

TECHNICAL SKILLS

Languages & Tools: C/C++, Python, PyTorch, NumPy, MATLAB, Simulink, ROS, MuJoCo, Isaac Gym, Isaac Lab.
Hardware Experience: Servo Motor, FPGA, PSoC, EDA, Arduino Uno, Analog & Digital Circuits, 3D Modeling & Print.
Operation Experience with Robot Platforms (sim + real): UR-5, Franka, ALOHA, XBot-S, Booster T1, Unitree H1.