Xiaoshen **Han**

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Education

Shanghai Jiao Tong University — *Shanghai, China*

Bachelor of the IEEE Honored Class — *Sept. 2022 – Present*

- Average score: **93.85/100**, rank: **7/98**.
- Achieved top scores (Grade A/A+) in **32/43** courses, including: Mathematical Analysis(A+), Linear Algebra(A+), Probability and Statistics(A), Linear Optimization and Convex Optimization(A+), Discrete Mathematics(A+) , Physics(A+), Digital Electronics(A), Analog Electronics(A+), Circuit Theory(A+), Data Structures(A+), Computer Organization(A), Computer Networks(A+), and more.

Experience

Apex data & knowledge management lab, Shanghai Jiao Tong University — *Shanghai, China*

Undergraduate Research Assistant, Advised by Prof. Weinan Zhang — *July 2023 – Present*

- Research focus: offline reinforcement learning, diffusion model for RL.

OpenRobotLab, Shanghai AI Laboratory — *Shanghai, China*

Undergraduate Research Intern, Advised by Dr.Jiangmiao Pang — *July 2024 – Jan. 2025*

- Research focus: real-to-sim-to-real, manipulation.

Robotics Research, ByteDance — *Beijing, China*

Undergraduate Research Intern, Advised by Dr.Minghuan Liu — *March 2025 – August 2025*

- Research focus: sim-to-real, manipulation.

Kempner, Harvard University — *Cambridge, U.S.*

Undergraduate Research Intern, Advised by Prof.Yilun Du — *August 2025 – Present*

- Research focus: manipulation.

Publications

Manipulation as in Simulation: Enabling Accurate Geometry Perception in Robots — *Preprint*

Minghuan Liu* Zhengbang Zhu* **Xiaoshen Han*** et al. [Paper] — *Oct. 2024 – Sept. 2025*

- We propose Camera Depth Models (CDMs) as a simple plugin on daily-use depth cameras to get accurate metric depth.
- CDMs achieve nearly simulation-level accuracy in depth prediction, effectively bridging the sim-to-real gap for manipulation tasks.
- For the first time, a policy trained on raw simulated depth, without the need for adding noise or real-world fine-tuning, generalizes seamlessly to real-world robots on two challenging long-horizon tasks

RE^{3}SIM: Generating High-Fidelity Simulation Data via 3D-Photorealistic Real-to-Sim for Robotic Manipulation — *Preprint*

Xiaoshen Han, Minghuan Liu, Yilun Chen, Junqiu Yu, Xiaoyang Lyu, Yang Tian, Bolun Wang,Weinan Zhang, Jiangmiao Pang [Paper] — *Aug. 2024 – Jan. 2025*

- High-fidelity geometry and vision: small sim-to-real gap in both geometry and visual aspects.
- High efficient data collection: scene reconstruction in 2.5 minutes and simulation data at 100 episodes per 10 minutes.
- Zero-shot sim-to-real transfer: limited simulation data brings high success rates.

Long-Horizon Rollout via Dynamics Diffusion for Offline Reinforcement Learning — *Preprint*

Hanye Zhao* **Xiaoshen Han*** Zhengbang Zhu Minghuan Liu Yong Yu Weinan Zhang. [Paper] — *Sept. 2023 – May. 2024*

- We use diffusion-based generative models to synthesize data for offline reinforcement learning algorithms.
- Our method can generate synthetic data that maintains the consistency of both dynamics and policy simultaneously.
- The method improved the performance of a variety of offline RL algorithms.

Projects

SnakeGame — *Shanghai, China*

Leader & developer. [Code] — *June. 2023 – July. 2023*

- Snake game implement in C++ for class CS1605: Programming Practice. **Best project** in the class .
- We used C++ and Qt implement a simple snake game from stretch with several with multiple levels and multiple props.

Noodle-Scholar *Shanghai, China*

LEADER & DEVELOPER. [CODE] *Sept. 2023 – Jan. 2024*

- A simple scholarly search engine for class ICE2604: Introduction to Electrical Engineering (Category B). **Best project** in the class .
- We designed a website with separated front-end and back-end for searching academic papers.
- We implemented functionalities including user login, human-machine verification, LLM-powered Q&A, and more.

Honors & Awards (Selected)

2024 **OPTIVER Excellence Scholarship (Top 1% SJTU),** Shanghai Jiao Tong University *Shanghai, China*

2022-2024 **Zhiyuan Honor Scholarship (Top 5% SJTU),** Shanghai Jiao Tong University *Shanghai, China*

2024 **National Scholarship Candidate(Top 0.5%),** Shanghai Jiao Tong University *Shanghai, China*

2023, 2024 **Academic Excellence Scholarship (Top 5% SJTU),** Shanghai Jiao Tong University *Shanghai, China*

Teaching Assistant

CS1602: Introduction to Computation(2023) *Shanghai, China*

[COURSE LINK] *Sept. 2023 – Jan. 2024*

Skills

Programming Python, C/C++, LaTeX, HTML/CSS, Linux, Assembly language, SQL, JavaScript, Vue3, Verilog, etc.

Frameworks PyTorch, Numpy, Git, OpenCV, Anaconda, MySQL, MongoDB, NVIDIA Isaac Sim, cuRobo, edm framework