Xiaoshen **Han**

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Education

Shanghai Jiao Tong University
Shanghai, China

Bachelor of the IEEE Honored Class — *Sept. 2022 – Jun. 2026*

- Average score: **93.15/100**, rank: **8/98**.
- 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.

Shanghai Jiao Tong University
Shanghai, China

Incoming Ph.D. Student at Apex Data & Knowledge Management Lab — *Sept. 2026 – NA*

- Advised by Prof.Weinan Zhang .
- Research focus: robotics; manipulation; imitation learning.

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.

Seed Robotics, ByteDance
Beijing, China

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

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

Kempner Institute, Harvard University
Cambridge, U.S.

Undergraduate Research Intern, Advised by Prof.Yilun Du — *August 2025 – March 2026*

- Research focus: fast manipulation; action representation.

Publications [Full list]

B-Spline Policy: Accelerating Manipulation Policies via B-Spline Action Representations
Release-soon

Xiaoshen Han, Haoyu Xiong, Haonan Chen , Chaoqi Liu, Yuke Zhu, Minghuan Liu, Yilun Du. [In submission] — *Oct. 2025 – Jan. 2026*

- We propose B-spline policy (BSP), an action representation designed for accelerating robot manipulation policies.
- BSP parameterizes actions as continuous B-spline curves rather than predicting discrete-time action chunks.
- BSP substantially accelerates task execution, achieving a 3.76× improvement over baselines while maintaining high success rates.

Manipulation as in Simulation: Enabling Accurate Geometry Perception in Robots
ICLR 2026

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
ICRA 2026

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.

Honors & Awards (Selected)

2024	**OPTIVER Excellence Scholarship (Top 1% SJTU),** Shanghai Jiao Tong University	*Shanghai, China*
2022-2025	**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*