

# RUNSEN XU

✉ runsenxu@ie.cuhk.edu.hk · ☎ (+852)94977951 · 🏠 runsenxu.com · 🎓 google scholar

## 🏛️ EDUCATION

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**The Chinese University of Hong Kong (CUHK)** Hong Kong, China  
Ph.D. Student at MMLab, Information Engineering Aug. 2022 – June 2026  
• Advisor: Prof. Dahua Lin

**Zhejiang University (ZJU), Chu Kochen Honors College** Hangzhou, China  
B.Eng. in Computer Science and Technology (Qishi Honor's Program) Sep. 2018 – June 2022  
• GPA: 3.92/4.00, 90.30/100.00

## 📖 PUBLICATIONS

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(# corresponding author, \* equal contribution)

- [1] **Runsen Xu**, Xiaolong Wang, Tai Wang, Yilun Chen, Jiangmiao Pang<sup>#</sup>, Dahua Lin, “PointLLM: Empowering Large Language Models to Understand Point Clouds”, arXiv Preprint, 2023. [\[Paper\]](#)
- [2] Tai Wang\*, Xiaohan Mao\*, Chenming Zhu\*, **Runsen Xu**, Ruiyuan Lyu, Peisen Li, Xiao Chen, Wenwei Zhang, Kai Chen, Tianfan Xue, Xihui Liu, Cewu Lu, Dahua Lin, Jiangmiao Pang, “EmbodiedScan: A Holistic Multi-Modal 3D Perception Suite Towards Embodied AI”, arXiv Preprint, 2023. [\[Paper\]](#)
- [3] Xiaolong Wang, **Runsen Xu**, Zuofan Cui, Zeyu Wan, Yu Zhang, “Fine-Grained Cross-View Geo-Localization Using a Correlation-Aware Homography Estimator”, in Neural Information Processing Systems (NeurIPS), 2023. [\[Paper\]](#)
- [4] **Runsen Xu**, Tai Wang, Wenwei Zhang, Runjian, Chen, Jinkun Cao, Jiangmiao Pang<sup>#</sup>, Dahua Lin, “MV-JAR: Masked Voxel Jigsaw and Reconstruction for LiDAR-Based Self-Supervised Pre-Training”, in Computer Vision and Pattern Recognition (CVPR), 2023. [\[Paper\]](#)
- [5] Runjian Chen, Yao Mu, **Runsen Xu**, Wenqi Shao, Chenhan Jiang, Hang Xu, Zhenguo Li, Ping Luo, “CO<sup>3</sup>: Cooperative Unsupervised 3D Representation Learning for Autonomous Driving”, in International Conference on Learning Representations (ICLR), 2023. [\[Paper\]](#)
- [6] Danpeng Chen, Nan Wang, **Runsen Xu**, Weijian Xie, Hujun Bao, Guofeng Zhang. “RNIN-VIO: Robust Neural Inertial Navigation Aided Visual-Inertial Odometry in Challenging Scenes”, in International Symposium on Mixed and Augmented Reality (ISMAR), 2021. [\[Paper\]](#)
- [7] Zhaoyang Huang\*, Xiaokun Pan\*, **Runsen Xu**, Yan Xu, Kachun Cheung, Guofeng Zhang, Hongsheng Li, “LIFE: Lighting Invariant Flow Estimation”, arXiv Preprint, 2021. [\[Paper\]](#)

## 🔍 RESEARCH EXPERIENCES

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**OpenRobotLab, Shanghai AI Laboratory** Mar. 2023 - Present  
Remote visiting student mentored by Dr. Jiangmiao Pang  
• Worked on 3D vision and language, multi-modal large language models (LLMs).

**Shanghai AI Laboratory** Nov. 2021 - July 2022  
Research intern mentored by Dr. Jiangmiao Pang  
• Worked on self-supervised 3D representation learning.

**3D Vision Group, CAD&CG State Key Lab, Zhejiang University** Mar. 2020 - Oct. 2021  
Research assistant advised by Prof. Guofeng Zhang  
• Worked on indoor AR navigation, indoor navigation solutions for individuals with visual impairments, and optical flow estimation.

## Mobile SLAM, SenseTime Group Ltd.

Mar. 2021 - June 2021

Research intern

- Worked on neural inertial navigation with IMU data.

## SELECTED AWARDS

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- Hong Kong PhD Fellowship (most prestigious scholarship for Ph.D. studies in Hong Kong) 2022
- CUHK Vice-Chancellor's PhD Scholarship 2022
- Outstanding Graduates of Zhejiang University 2022
- Outstanding Undergraduate Thesis 2022
- National Scholarship (highest honor nationwide for Chinese undergraduates) 2019

## TEACHING

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- Teaching Assistant: IERG4998 - Final Year Project Spring 2023
- Teaching Assistant: IERG4998 - Final Year Project Fall 2022

## COMPUTER AND LANGUAGE SKILLS

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- Programming Proficiency: Python, C/C++, PyTorch, Shell Script, Java, MATLAB, JavaScript/HTML/CSS
- Language Proficiency: Mandarin (native speaker), English (proficient)