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[GitHub](#) | [LinkedIn](#) | [Personal Page](#)

EDUCATION

Nanyang Technological University (NTU), Singapore

July 2020 – July 2024

- Bachelor of Engineering (Computer Engineering), Distinction Honours
- Awards & Honours: Dean's List (**Top 5%**); Science and Engineering Undergraduate Scholarship (SM2) Scholarship

PUBLICATIONS

"Robi Butler: Remote Multimodal Interactions with Household Robot Assistant" | *In Submission*

Anxing Xiao*, Nuwan Janaka, **Tianrun Hu**, Anshul Gupta, Kaixin Li, Cunjun Yu, David Hsu [[arXiv](#), [video](#), [website](#)]

"ManiFoundation Model for General-Purpose Robotic Manipulation of Contact Synthesis with Arbitrary Objects and Robots" | *IROS 2024 (Oral)*

Zhixuan Xu*, Chongkai Gao*, Zixuan Liu*, Gang Yang*, Chenrui Tie, Haozhuo Zheng, Haoyu Zhou, Weikun Peng, Debang Wang, **Tianrun Hu**, Tianyi Chen, Zhouliang Yu, Lin Shao [[arXiv](#), [website](#), [code](#)]

RESEARCH RELATED WORK&INTERN EXPERIENCES

Research Engineer @ Adaptive Computing Lab, NUS (Full-Time)

Aug 2024 – Aug 2025

- Supervised by Prof. David Hsu, Smart System Institute (SSI) & School of Computing (SoC)
- Led foundational research on human-robot teaching interfaces, establishing design principles for household robotics teleoperation that optimize both user experience and robot learning efficiency
- Developed a comprehensive imitation learning pipeline integrating multiple data gathering methods with advanced policy training (ACT, Diffusion Policy) for diverse robotic platforms (Fetch, Kinova Gen3, Franka) [[code](#)]

Research Assistant Internship @ LinS Lab, NUS (Part-Time)

Sep 2023 – Jun 2024

- Supervised by Assistant Prof. Lin Shao, School of Computing (SoC)
- Led development of an enhanced Gaussian Splatting framework for indoor 3D reconstruction, incorporating novel geometric constraints for improved accuracy [[code](#), [doc](#)]

ASTAR Student Research Assistant @ NTU (Part-Time)

Jun 2022 – Jul 2022

- Implemented a knowledge-based Question and Answer System based on BERT & GPT2 [[code](#)]

ACADEMIC PROJECTS

Digital Twin

Aug 2024 – Feb 2025

- Created a high-fidelity Gazebo simulation platform by leveraging [my 3D reconstruction pipeline](#) [[code](#)]
- Course project platform with Fetch robot capabilities (navigation, manipulation, motion planning) integrated

NTU Final Year Project: Study of local descriptors in Visual Place Recognition

July 2023 – July 2024

- Identified limitations in conventional local descriptor sampling methods for VPR acceleration
- Developed enhanced descriptor selection methods using semantic segmentation and high-pass filters [[code](#), [report](#)]

NTU Undergraduate Research (URECA)

Aug 2021 – July 2022

- Developed a SLAM simulation environment in Gazebo for multi-sensor testing with various configurations

OTHER WORK&INTERNSHIP EXPERIENCES

Machine Learning Engineer Internship @ Continental AG (Full-Time)

Jan 2023 – Jun 2023

- Developed the core SLAM modules for autonomous forklift project at Changi Airport
- Implemented visual loop closure detection using NetVLAD, SuperPoint, and SuperGlue
- Built benchmarking framework to evaluate custom SLAM implementation against RTABmap and Kalman filter-based solutions using ROS2 Humble

RELAVENT COURSE PROJECTS

Intelligent Agents [[code](#)]; Neural Network [[code](#)]; Embedded Programming [[code](#)]; Signal Processing [[code](#)]; Advanced Algorithms [[code](#)]; Microprocessor [[code](#)]; Digital System Design [[code](#)]; Object Oriented Design and Programming [[code](#)]; Data Science [[code](#)]; Data Structure and Algorithm [[code](#)];

SKILLS

Languages: Chinese, English; **Programming:** Python, C, C++, Java; **Framework:** ROS1, ROS2, Gazebo, PyTorch