LU ZHUOYI

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EDUCATION

Aug 2022 – Jun 2026	**Nanyang Technological University, Singapore**	(CGPA: 4.64/5.00, Top 5%)
	Bachelor of Mechanical Engineering	
	Robotics and Mechatronics Stream, Minor in Mathematics	
Jun 2025 – Aug 2025	**Rice University, Houston, Texas, United States of America**	
	Summer Research Intern @RobotPI Lab under Prof. Kaiyu Hang	
Sep 2016 – Jun 2022	**Desheng School, Guangdong, China**	
	International Baccalaureate Diploma (IBDP): 41/45	

SKILLS

Data Analysis & Machine Learning	Python (OOP), Conda/Anaconda
Robotics	ROS1/2, C/C++, Arduino, CAN Protocol, SolidWorks
Simulaton	Mujoco, Maniskill, MATLAB

RESEARCH EXPERIENCE

Robotics Research Centre (RRC), NTU Singapore　　　　　　　　　　　　　May 2024 – Present

– Research the Series-Elastic Actuator model of HEBI motor. Designed experiments for motor parameter estimation e.g., Armature (Torque-Current), Velocity Constant (Voltage-Velocity) with PWM and PID control.

– Built dual planar and 6DOF arms with HEBI motors. Establish Tele-operation based Impedance control through Forward Kinematics and Jacobian.

Rice University, Houston, Texas, United States of America　　　　　　　　Jun 2025 – Aug 2025

– Develop the codebase (e.g., Keyboard, XBOX joystick and VR Teleoperation Control) for XLeRobot: Fully Autonomous Household Dual-Arm Mobile Robot for $660 (https://github.com/Vector-Wangel/XLeRobot).

– RGB/Semantic Segmentation based Reinforcement Learning (PPO) via ManiSkill and zero-shot real-world deployment. Developed based on Stones's LeRobot Sim2Real codebase.

Delta Electronics, Singapore　　　　　　　　　　　　　　　　　　　　　　Jan 2025 – May 2025

– Gazebo and Mujoco Simulation of quadruped jumping using virtual spring-damper system in each leg' hip and foot frame. Real World Deployment through Unitree Mujoco and ROS2.

– Integrate Mujoco with Pinocchio Library for a basic simulation framework in C++ for Manipulation/Locomotion Tasks.

PROJECTS

Undergraduate Research Program (URECA) under Prof. K Jimmy Hsia　　Jul 2023 – Jun 2024

– Developed a new frontal photopolymerization strategy for functionally-graded materials based on UV attenuation. Published in URECA Papers and Posters.

Kaggle Competition in Modeling earthquake richter and impacts　　　　Aug 2023 – Dec 2023

– Model earthquake damage grades in Nepal using location and construction data from Kaggle Dataset.

– Data cleaning, one-hot encoding, visualization, Random Forest, Logistic Regression, and KNN applied.

PUBLICATIONS

– Yang, L., Turlapati, S. H., **Lu, Z.**, Lv, C., & Campolo, D., "A Planning Framework for Stable Robust Multi-Contact Manipulation," in *Proc. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Hangzhou, China, Oct. 2025.

Extracurricular Activities

Xinyuan Charity Center, Guangdong, China   Aug 2020 – Aug 2021
– Organized drawing lessons for autistic children to help them adapt to school and build social relationships.

Residential Hall Garden Leader, NTU Singapore   Aug 2023 – Present
– Led weekly gardening activities, including seed germination, watering, and tool maintenance.

Honors and Awards

– Dean's List Certificate AY2023/24 (Top 5%), Mechanical Engineering, NTU Singapore
– Dean's List Certificate AY2024/25 (Top 5%), Mechanical Engineering, NTU Singapore
– URECA Undergraduate Research Program 2023/2024 Certificate