



Than Duc Huy

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EDUCATION

Nanyang Technological University (NTU)

Aug 2020 – Jun 2024

- **Bachelor of Engineering (Electrical and Electronics Engineering)**
 - Control, Automation, Robotics specialisation
- **Honours (Highest Distinction)**
 - CGPA: 4.88/5.00
- CN Yang Scholarship Program (CNYSP) Recipient for Science & Engineering Research
- Dean List: AY20/21, AY22/23

WORK / INTERNSHIPS / EXPERIENCE

Augmentus

Robotics Software Developer (Full time)

Aug 2024 – Present

Robotics Intern (SGInnovate Summation Apprenticeship Programme)

Jan 2024 – Jun 2024

- Developed and optimised robotic motion planning algorithms in **C#, Unity**.
- Troubleshooted the no-code programming solution in office and on-site.

Institute for Infocomm Research (I2R), A*STAR

Research Intern

May 2023 – Jul 2023

- Improved laboratory capability by transferring Gelsight fabrication techniques from KCL.
- Applied Deep Reinforcement Learning algorithms: TD3, PPO using Gelsight for regrasp tasks.
- Explored State Estimation techniques such as Kalman Filter, Factor Graph.

King's College London (KCL), Robot Perception Lab

Visiting Research Student (Overseas Final Year Project)

Dec 2022 – May 2023

- Project title: Tactile Regrasp of Objects with Dynamic Center-of-Mass using Reinforcement Learning
- Fabricated vision-based tactile sensor Gelsight and processed signal using **OpenCV**.
- Applied Deep Reinforcement Learning Algorithm: Offline DQN using Gelsight for regrasp tasks.
- Used **ROS, MoveIt** to control UR5 robot arm and Robotiq-2F gripper.

PROJECTS

MLDA@EEE Robotics Team Leader (Team of 4)

2nd Place in **BARN Robot Navigation Challenge** at **ICRA 2024 Yokohama, Japan**

Sep 2022 – May 2024

- Implemented Model Predictive Control as a local planner using **Python, C++** nodes in the **ROS** framework.
- Utilized navigation packages (move_base) in **Gazebo** simulation, in a **Docker** container.
- Deployed on Clearpath Jackal mobile robot at ICRA 2024.

NTU- Design and Innovation Project (Team of 4)

Food Recipe Management App

Aug 2022 – Nov 2022

- Programmed in **Java** to implement OOP Application.
- Incorporated **Github** workflow in the Software Development Cycle, created documentation on Github pages.

Garage@EEE Project

6 DOF Stewart Platform with Linear Actuator

Aug 2021 – Jun 2022

- Built encoded linear actuators from standard linear actuators and electrical vernier callipers, keeping cost within budget compared to purchasing commercial encoded actuators.
- Debugged, reverse engineered the vernier calipers with logic analyser to interpret digital signals.
- Programmed in **C++** 6 microcontrollers for actuators PID control.
- Applied kinematics for parallel linkage, controlled using Bluetooth PS4 controller.

CNYSP Making & Tinkering Module Team Leader (Team of 4)

6 DOF Controller for Robotic Arm Control

May 2021 – Sep 2021

- Built 6 DOF controller with aluminium frame, encoders and robotic arm with Robotis Dynamixel servos.
- Applied **forward kinematics** concepts, DH parameters to define serial linkage controller; applied **inverse kinematics** to control servo motors.
- Performed calculation and visualisation with **Python**, used Bluetooth communication with ESP32.

CNYSP Research Module

Characterise Time-of-Flight Sensor with Optical Fibre Waveguide

Jan 2021 – May 2021

- Constructed testing platform using off-the-shelf components and programmed using **Arduino** to create static and dynamic operating conditions.
- Characterised sensor behaviors with optical fiber waveguide to route light to drone exterior.

OVERSEAS EXCHANGE PROGRAM

King's College London, United Kingdom (KCL)

Dec 2022 – May 2023

- Research Exchange for Final Year Project
- Gained insight into full-time research experience: proposed and discussed ideas with supervisors and other researchers, developing competency and independence in Robotics research.
- Collaborated with researchers from diverse backgrounds and appreciated various local cultural values.

LEADERSHIP / CO-CURRICULAR ACTIVITIES

Machine Learning and Data Analytics (MLDA@EEE)

Vice President of Academics (2023-2024)

Member of Academics Committee

Aug 2021 – Jun 2024

- Coordinated with Academics committee members to organise **15+ workshops**, instructing more than 150 NTU students on Machine Learning (ML) concepts such as CNN, RNN, Transformer, LLM, Prompt Engineering
- Communicated with MLDA Executive Committee and NTU Management staff to **propose initiatives with long-term impact** and provide the necessary technical support.
 - GPU server management for ML projects
 - ML demonstrations for public display and engagement
 - MLDA Robotics Team

Garage@EEE Makerspace

Head of Operations (2022-2023)

Member of Operations Committee

Aug 2020 – Jun 2024

- Managed inventory and provided technical support for projects using Makerspace resources.
- Conducted **internal training** for interested members on machine usage: 3D Printer, Laser Cutter, PCB Miller.
- Repaired, upgraded machines (3D Printers) and used Arduino, Raspberry Pi to create custom automation (e.g., periodic heating of PLA filaments to prevent moisture).

SKILLS / INTERESTS

- **Languages:** English, Vietnamese
- **Hardware Prototyping:**
 - Design: Fusion 360, SolidWorks, Altium Designer
 - Fabrication: 3D Printing, Laser Cutting, Oscilloscope, Logic Analyser
- **Hardware Platform:** Windows, Linux, Arduino, ESP32, NVIDIA Jetson, Raspberry Pi
- **Programming:** Python, C Language, C++, C#, Unity, Java, Docker, MATLAB,
- **Machine Learning & Reinforcement Learning:** Pytorch, OpenAI gym
- **Robotics:** ROS & Core Packages, State Estimation, Factor Graph, SLAM, Model Predictive Control
- **Visual Design:** Adobe Photoshop, Illustrator, Premiere Pro, Procreate, Stable Diffusion (automatic1111 Web UI)
- **Technical community engagement:** Meet up with Machine Learning, ROS interest groups in Singapore