

Daniel Yao-Ting, Huang

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Summary

As an Electrical Engineering undergraduate at National Taiwan University, I have amassed substantial research experience through my work at NTU-RobotLearning-Lab and the Advanced Control Laboratory. My innovative edge is showcased by a portfolio of side projects, including a prize-winning VR Quidditch simulator and the "Magic Hand" gesture-controlled presentation system. My practical problem-solving capabilities have been further honed through internships at CAVEDU, where I focused on AI education, and at ITRI, working on autonomous vehicle systems.

Education

National Taiwan University(NTU)

Taipei, Taiwan

B.S. IN ELECTRICAL ENGINEERING

Sep. 2019 - Aug. 2023

- Overall GPA: 3.71/4.3(3.64/4.0) Last 60 GPA: 3.75/4.3(3.69/4.3)
- CS-related GPA: 4/4.3(3.94/4.0)
- Teaching Assistant for Cornerstone EECS Design and Implementation (2023 Spring) - Instructor: Prof. Ho-Lin Chen
- Selected Courses: Advanced Computer Vision, Robotics, Machine Learning, Reinforcement Learning, Computer Vision: from recognition to geometry*, Digital Visual Effects, Deep Learning for Computer Vision*, Algorithms, Computer Architecture, Introduction to Computer Networks. (*indicates graduate courses)

Research

Robot Learning Lab

Shau-Hua, Sun

UNDERGRADUATE RESEARCH STUDENT

July 2022 – present

- Investigating Unsupervised Reinforcement Learning (RL) problems based on SPIRL.
- Enhancing learning efficiency of RL algorithms through innovative structuring for continuous skill acquisition.

Advance Control Lab

Li-Chen, Fu

UNDERGRADUATE RESEARCH STUDENT

Feb 2022 – June 2022

- Assisted the experiment of the UAV (unmanned aerial vehicle) system.
- Conducted experiments and developed a visual odometry system to improve indoor UAV navigation in GPS-denied environments using optical flow techniques.

Work Experience

Industrial Technology Research Institute(Intern)

Hsinchu, Taiwan

REINFORCEMENT LEARNING, AUTONOMOUS SYSTEM, ROS, DOCKER

Aug. 2023 - present

- Contributed to the self-driving automobile group by applying reinforcement learning for behavioral prediction of autonomous vehicles.
- Designed a virtual training environment for reinforcement learning framework based on real-world collected vehicle data.

CAVEDU(Summer Intern)

Taipei, Taiwan

PYTHON, GOOGLE AIY, PROGRAM EDUCATION

Oct. 2016 - Jun. 2017

- Aided in the development of educational content using Google AIY Kits.
- Designed and taught a Python course for high school students, fostering STEM skills in classes averaging 6-7 students.

Projects

Deep Learning Boosts Visual Odometry

CSIE7421 ADVANCED COMPUTER VISION

May 2023 - Jun 2023

- Engineered a rapid visual odometry system integrating Meta's 'segment anything' vision model with advanced camera optics.
- Transformed sequential imagery from varying car perspectives into precise environmental trajectories.
- Enhanced output accuracy by applying causal filters and object's selection rules for trajectory smoothing.

Magic Hand

A GESTURE CONTROL SYSTEM USING JETSON NANO AND REALSENSE FOR INTUITIVE HAND-BASED PRESENTATION MANAGEMENT.

Apr 2023 - May 2023

- Utilized Intel RealSense technology for precise arm motion and depth data capture.
- Designed the system on a Jetson Nano platform, ensuring responsive real-time processing.
- Integrated automatic projector screen plane correction for an enhanced user interaction experience.

Sushiro-Bot

CSIE5047 ROBOTICS

Oct 2022 - Dec 2022

- Developed a 7-axis robot arm for making Nigiri-sushi and Tekka-maki, incorporating computer vision techniques for precision.
- Used computer vision techniques to automatically evaluate the quality of the sushi and calculate the best gripping point for soft ingredients

VR Quidditch

A UNITY-BASED QUIDDITCH SIMULATOR WITH A 3-DOF MOTION PLATFORM FOR AN AUTHENTIC FLIGHT EXPERIENCE.

July 2021 - Oct 2021

- Assisted the construction of the motion platform that can be installed on any chair.
- Developed the firmware for smoothing the serialized data of the gyro sensor embedded in the broom and wand controller.
- Designed the haptic feedback algorithm, including the seat's vibration and the wind's intensity.

Leadership & Volunteer experience

2022 MakeNTU

EVENT GENERAL COORDINATOR

Aug 2021 - May 2022

- Orchestrated a national competition with over 34 teams and 134 undergraduates, leading marketing and coordination efforts.
- Enhanced event visibility, contributing to a 20% increase in participant engagement.

Academic Department of NTUEE Student Association

MANAGER & COURSE LECTURER

Sep 2020 - Aug 2023

- Facilitated the usage and maintenance of machine tools for student projects.
- Managed inventory, ensuring the availability of modules and microcontrollers for over 200 students.
- Delivered lectures on the fundamental use and advanced techniques of AutoCAD and Fusion360.

Computer program consulting service

VOLUNTEER

Sep 2020 - Jan 2021

- Provided weekly consultation services to assist students from various departments in overcoming challenges with programming languages such as C++ and Python.

Awards & Competitions

2023	3rd prize of enterprise prize & Best Application Award , MakeNTU	Taipei, Taiwan
2021	3rd prize of Interactive Technology , NIICC	Taipei, Taiwan
2021	4th prize of enterprise prize , MakeNTU	Taipei, Taiwan
2020	Special prize of enterprise prize , Meichu Hackathon	Shinchu, Taiwan
2020	Special prize of enterprise award , MakeNTU	Taipei, Taiwan

Skills

Programming	Python, C++, C#, Matlab, Javascript
Tools and Technologies	Pytorch, OpenCV, ROS, Git
Hardware	Raspberry Pi, Jetson Nano, STM32, Arduino, UAVs
Designing Tools	Unity, Blender, AutoCAD, Fusion360, EasyEDA