

# HENG JUI, HSU

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## Education

### National Yang Ming Chiao Tung University (NYCU)

Sep. 2020 – Present

*B.E. in Industrial Engineering and Management (GPA: 4.05/4.30, Last 60: 4.17/4.30, Rank: 7/76)*

*Hsinchu, Taiwan*

*Minor in Computer Science (16 Classes, 42 Credits)*

*Three-Time on the Dean's List (Top 5% Ranked Student)*

## Skills

**Web Development:** TCP/IP, Server Configuration, Database Management, RESTful API

**Machine Learning:** Neural Networks, Metaheuristics Algorithms, PyTorch, TensorFlow

**Languages:** C/C++, Python, BASH, SQL, PHP, JavaScript

**Systems & Tools:** Linux, FreeBSD, VSCode, Vim, GNU Debugger, Make, Git

## Projects

### **Fitness Motion Classification** | *Python(Keras, Scikit-Learn, MediaPipe, OpenCV, NumPy)* Feb. 2024 - Mar. 2024

- Developed a system to classify fitness motions in videos, including squats, bench presses, and deadlifts, using 33 human skeleton keypoints extracted by MediaPipe and body angles derived from the keypoints.
- Utilized LSTM and Random Forest models to train and analyze the data, achieving an accuracy of 80.52% and 88.31% on the test set, respectively.
- Applied K-means clustering for unsupervised learning, and conducted experiments and analysis on the impact of video segmentation length and model depth on the classification performance.

### **Chat Bar - An Online Mud Game with Group Chatting Utility** | *C/C++(SFML), SQL* Oct. 2023 - Jan. 2023

- Wrote code with **over 2000 lines** from scratch to create an online game that provides features such as chatting, timing, and a moving map game via C++, MySQL.
- Utilized SFML to build the GUI and gaming system in client with utility of group chatting, character moving, etc.
- Using SHA-256, JSON, and MYSQL to protect or transmit user information, and providing user login, registration, and ranking function.

### **Elderly Care Map Website** | *Python, PHP, SQL, JavaScript, HTML, CSS* Feb. 2022 - Jun. 2022

- Developed a website featuring a map for elderly care, displaying the locations and information of institutes in Taiwan.
- Utilized Beautiful Soup and Selenium for data collection and web scraping, and integrated the gathered data with information provided by Government Open Data Platform to construct a database on MySQL.
- Used JavaScript, PHP, MySQL, and connected to Google Geography API to enable users to obtain facility usage information by clicking the icons indicating the level of bed occupancy on the map.

### **Solved Job Shop Scheduling Problem with Genetic Algor. and Bayesian Opt.** | *Flexsim* Apr. 2022 - Jun. 2022

- Employed Genetic Algorithm from metaheuristics to Solve Job Shop Scheduling Problem in Python.
- Hyperparameters using Bayesian Optimization in Genetic Algorithms.
- Utilized file scripting in Python to automate the output into a Flexsim-compatible format for cross-validation.

## Extracurricular Experience

### **Student Representative, College of Management**

Sep. 2023 – Present

*Representative*

*NYCU*

- Participated as a student representative in over 10 amendment drafts, such as the establishment of the College Committee Selection Procedure and the formulation of the Management School Development White Paper, and so on.

### **Student Association of Industrial Engineering and Management**

Jun. 2022 – Jun. 2023

*President*

*NYCU*

- Managed and recruited four teams comprising 37 individuals, orchestrating over 20 events in a year.
- Managed exam archives, event coordination, budget tracking, and project management via Notion, while also organizing over 5 years' worth of departmental association data.
- Refurbished the run-down student shared space on a tight budget, enabling campus clubs, such as NYCU OpenHouse, and students to utilize the space for their activities. [Click to see video](#)

### **Atona Case Competition (ATCC) Final Rounds in Preliminary**

Mar. 2022 – Apr. 2022

*Team member of "Gong Mei Swag"*

*Teacher Chang Foundation*

- Our group "Gong Mei Swag" was the **top 20 teams nationally** in the ATCC, with over **2000** teams registering.
- Initiated the "Heartbeat" Self-Media Project, promoting the scarcity of counseling staff and their service experience via podcasts and microfilms. Aims to help address the corporate transformation issues of the Zhang Teacher Foundation and raise youth mental health concerns.

### **Intel Navigator Program**

Nov. 2023 – Jan. 2024

*Team Leader of Odie Group*

*Intel Corp.*

- Experienced corporate culture, workplace environment, and an introduction to IC design, along with one-on-one consultations with a corporate mentor.