Li-Wei Yang

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EDUCATION

National Taiwan University Taipei, Taiwan
Bachelor in Biomechatronics Engineering 2018-2022

- **Overall GPA: 3.97/4.30, Rank: 2/54**
- Received **Dean's list Award** (GPA ranked top 5% in a semester)
- Relevant Coursework: Automatic Control (**A+**), Machine Learning (**A+**), Robotics (**A**), Digital Image Processing(**A**)

SKILLS

Programming
- Python (PyTorch, OpenCV), MATLAB (Robotics System Toolbox), C/C++, Java, C#, Latex, Kotlin

System
- Ubuntu, **ROS**, Kali Linux, Arduino, **TI F28388D**

Software
- SOLIDWORKS, **GAZEBO**, Simulink, Qt, 3D Slicer, Unity, Android Studio, Endnote

English proficiency
- TOEFL ibt: Total: 106, Reading: 29/30; Listening: 28/30; Speaking: 22/30; Writing: 27/30
- GRE General: Total: 325, Quantitative: 169/170; Verbal: 156/170; Writing: 3.5/6.0

RESEARCH EXPERIENCE

Robots and Medical Mechatronics Lab (RMML) Taipei, Taiwan
Undergraduate researcher, supervisor: Ping-Lang Yen Sept. 2020-Mar. 2022

- ***Smart cyber-physical system of a remote specimen collection robot***
  - Developed a statistical morphing oral model that fits the oral cavity in 3D Slicer, and build a simulation environment in GAZEBO for the operator to do the specimen collection.
  - Won **sponsorship** from the Ministry of Science and Technology of Taiwan.
  - Contained the RMSE of landmarks below 4 mm.
- Designed the torque of a counterbalance using MATLAB, which improved the motion of lab-designed specimen collection robot.

Center for Artificial Intelligence and Advanced Robotics (AIROBO) Taipei, Taiwan
Research Assistant, supervisor: Li-Chen Fu Feb. 2022-present

- ***Companion Healthcare Aid Robot Manager***
  - Used synchronous and asynchronous threading and callback functions to improve user experience.
  - Connected a smart watch (H2Plus) to the robot using BLE protocol.
  - Utilized SQLite to synchronize multiple users' physiological data to a remote server, and developed a multi-user switching feature on local robots.

PUBLICATIONS

2022 International Conference on Advanced Robotics and Intelligent Systems
Smart Cyber-physical System of a Remote Swabbing Robot
- Authors: Li-Wei Yang, Ping-Lang Yen
- Best Student Paper Contest: **First Place**

AWARDS

Takazaki Tomatake Scholarship Taipei, Taiwan
Apr. 2022

- The Scholarship was established by Dr. Takazaki Tomatake in 1987, who taught in the Department of Biomechatronics Engineering for 40 years.

LEADERSHIP EXPERIENCE

Mobile Lost and Found - MLF6110 Taipei, Taiwan
Team leader, related course: Robotics Jan. 2022

- Led the team to integrate an object searching robot using RealSense D435 and RPLIDAR-A1.
- Implemented DWA and AMCL navigation methods.
- Applied BRISK and RANSAC algorithms in object searching.

Dynability5 Taipei, Taiwan
Team leader, related course: Medical Mechatronics and Control Dec. 2021

- Built a 5 DoF manipulator that aim to deliver water bottle for people with physical disability.
- Concatenated various frequency filter and amplifier to collect clear EMG signal.
- Fine-tuned an SVM classifier to classify EMG pattern for manipulator control, achieve 90% accuracy.