

CHIH-HUNG CHEN

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EDUCATION

National Cheng Kung University

Sep. 2018 – June 2023

International Bachelor Degree Program on Energy Engineering

WORK EXPERIENCE

Research Assistant (full-time)

Apr. 2024–present

*Center for Artificial Intelligence and Advanced Robotics,
National Taiwan University, Taipei, Taiwan*

Project CHARM: Companion Healthcare Aid Robot Manager for Care of Elders

- Develop and maintain **Android APP** and backend servers for robots accompanying / interacting with elders.
- Design and conduct experiments informed by **psychological research** and **human-robot interaction**. Program robots to enhance interaction and engagement with elderly users.
- Develop multiple functionalities for robots (including **Cognitive Ability Tests (CogAT)**, depression assessments, and memory tests) aimed at improving quality of life for elderly users.

Project CRUSH: Cognitive Robotics with Understanding of Social and Human-interaction

- Integrate social robot functionalities into **ROS-based** mobile robots.
- Integrate sensors and **wearable devices** to monitor user's health metrics.
- Participate in scenario-based testing to deploy robots in various settings (e.g. elderly care centers and hospital nursing wards).

Project: Cross-platform Memory Aid Application for Patients at a Cognitive Clinic (launching soon on app stores)

- Maintain a cross-platform memory aid application developed using **Flutter** (including iOS and Android systems).
- Maintain and manage **PHP-based database** and clinic's server infrastructure.
- Collaborate with clinic to conduct experiments (handling case recruitment, experiment design, and data collection from actual patients) to enhance user experience and functionality.

Research Assistant (part-time)

Oct. 2023–Mar. 2024

*Computational Brain and Language Laboratory,
National Cheng Kung University, Tainan, Taiwan*

Project: A Mobile Device-based Automatic AI Assessment for Rapid Screening of Language Abnormalities Using Chinese Spontaneous Speech

- Developed cross-platform language detection application for early-stage language disorder screening using **Flutter**.
- Designed and deployed backend servers for mobile application using **Python** (including integration with **MongoDB** for database management).
- Utilized Python for analysis and preprocessing of large-scale text and speech datasets to support fine-tuning and training of large language models.

RESEARCH EXPERIENCE

Energy System

Feb. 2021–Jan. 2022

Green Energy and Fuel Laboratory (GENFUEL), National Cheng Kung University, Tainan, Taiwan

- Designed thermoelectric energy systems using **SolidWorks**.
- Wrote embedded code for power generation module using **MCU** and **C**, implementing features such as power detection, energy storage, and energy display.
- Assembled components of thermoelectric system. Conducted experiments for research documentation and competition participation.

HONORS & AWARDS

Finalist, Energy Technology Creative Project Competition,

National Science and Technology Museum, 2021

Project: All-weather Hybrid System for Hot Water and Power Generation Using Solar Vacuum Tubes and Thermoelectric Chips

Participated in a competition aimed at promoting green energy innovation and integration of clean energy applications. Selected as one of 21 finalists out of 99 teams nationwide, demonstrating project's innovation and practicality.

- **Experimental Design and Data Analysis:** Designed and executed experiments for system validation. Analyzed results to optimize power generation efficiency.
- **Reporting:** Authored comprehensive research report detailing findings and methodologies.
- **Presentation:** Created poster and served as main speaker for team during competition.

SKILLS

Programming Language: Java, Python, C/C++, JavaScript, Dart, PHP, Bash Shell

Frameworks and Tools: Flask, Flutter, Docker, MySQL, SQLite, PyTorch, ROS

Computer Software: Android Studio, MATLAB, SolidWorks, AutoCAD