

# Ruei-Hong (Neil) Ni

[hongnai4507@gmail.com](mailto:hongnai4507@gmail.com) | [github.com/Hong4507](https://github.com/Hong4507)

## EDUCATION

### National Taipei University

*Bachelor of Communication Engineering*

New Taipei, Taiwan

Sep. 2025 – Present

### Mingdao High School

*Gifted and Talented Program*

Taichung, Taiwan

Aug. 2019 – Jun. 2025

## EXPERIENCE

### High School Robotics Team Coaching

*FRC Team 7130, Mingdao High School*

Feb. 2025 – Present

Taichung, Taiwan

- Mentored student drive teams on tactical robot operations and strategic decision-making to maximize competitive performance
- Designed and implemented a comprehensive technical training curriculum, ensuring members mastered engineering fundamentals prior to the competition season
- Spearheaded the deployment of a practice field Field Management System (adapted from Team 254), creating a competition-grade simulation environment.

## PROJECTS

### FIRST Robotics Competition (Team 7130) | *Java, Embedded Programming*

June 2022 – June 2023

- Developed scalable Java code for the NI RoboRIO embedded system, coordinating motor output with sensor data for a 120lb competitive robot
- Optimized robot motion planning using PID controllers and odometry, significantly reducing path tracking errors during autonomous periods
- Leveraged OpenCV to engineer a vision-based localization system, allowing the robot to autonomously identify and align with field targets
- Designed a modular Finite-State Machine (FSM) to streamline robot actions, improving code maintainability and debugging efficiency

## TECHNICAL SKILLS

**Languages:** Java, C++, HTML/CSS

**Embedded Programming:** Arduino, Raspberry Pi, NI RoboRIO

**Developer Tools:** Git, Visual Studio Code, IntelliJ IDEA