

Ruei-Hong (Neil) Ni

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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