Po Cheng (Henry) Chen

Atlanta, GA | pchen432@gatech.edu | henrychen.me | F-1 Visa

Education

Georgia Institute of Technology | Atlanta, GA *August 2024 – Present*
Bachelor of Science in Computer Engineering, GPA 4.0 Expected Graduation, May 2027
Relevant Coursework: Data Structures & Algorithms, Discrete Math for CS, Digital Design Lab, Programming HW/SW systems, Circuit Analysis, Linear Algebra, Differential Equations, Digital System Design, Objected Oriented Programming, Physics E&M

Skills

Programming: C++, C, Python, Java, JavaScript (Node.js)
Robotics/Embedded: Reinforcement Learning, Reward Shaping, Domain Randomization, Path Planning (RRT, Pure Pursuit, DWA), SLAM (SLAM Toolbox), Motion Profiling, Feedforward Control, Inverse Kinematics, Finite State Machines, Real-Time Systems (RTOS)
Software/Simulation: ROS2, Isaac Sim, Isaac Lab, OpenCV, Mediapipe, Docker, Linux
CAD/Manufacturing: SolidWorks, Autodesk Inventor, 3D Printing, CNC, Milling
Languages: English (native), Chinese (native)

Research

SCREAM Lab | National Cheng Kung University (NCKU) | Tainan, Taiwan *July 2025 – Present*
Research Intern

- Built a reinforcement learning locomotion training environment in Isaac Sim and Isaac Lab for quadruped locomotion, using custom reward functions, tailored simulation physics, and domain randomization (CoM, mass, friction) to improve gait stability under perturbations, robustness to hardware variations, and transferability from simulation to physical robots.
- Optimized a compact neural network architecture for real-time NVIDIA Jetson inference within a ROS2 control framework, enabling rapid embedded deployment for quadruped locomotion.

Technical Projects

VEX Robotics Team 980S | Skywalker Robotics *August 2018 – Present*
Captain, Robot Designer, Programmer

- Achieved ~99% improvement in final position accuracy (~2 mm error vs. ~20 mm with PID) by developing an S-curve motion profiling system with feedforward-dominant control, respecting motor current limits and torque–speed curves for payload robustness.
- Built a modular autonomous navigation framework in embedded C++ with odometry, pure pursuit, and path planning/tracking, enabling rapid development and reuse of 6+ autonomous algorithms, and integrated RTOS-based multi-threading with finite state machines and mutexes for deterministic, race-condition-free real-time control.

Drone Assisted Water Sampling | Macronix Science Award *September 2022 – June 2023*
Principal Investigator

- Designed and built a 3D-printed quadcopter with a retractable water collection payload and GPS navigation for autonomous aerial sampling, cutting collection time by ~50% compared to manual methods.

Leadership and Activities

RoboRacing @ GT RoboJackets | Software Team | Atlanta, GA *January 2025 – Present*

- Developed and tested autonomous navigation algorithms in a simulated F1TENTH environment using ROS2 in Docker on Linux. Integrated SLAM Toolbox and evaluated path planning approaches including RRT, pure pursuit, and DWA.
- Tuned and validated controllers in simulation with RViz visualization, providing the foundation for real-world F1TENTH deployment.

GT Medical Robotics | Software Team | Atlanta, GA *August 2024 – January 2025*

- Built a Mediapipe-based Python pipeline to extract 3D hand landmarks and convert them into 5-dimensional vectors representing per-finger curvature, addressing multi-hand detection and fist-closed edge cases to deliver low-latency results robust to varying lighting and hand positions for integration with EMG-based prosthetic hand control.

Mingdao High School FRC Team 7130 | Technical & Programming Lead | Taichung, Taiwan *February 2022 – January 2024*

- Led programming and system integration for the 2023 season, implementing custom swerve drive inverse kinematics and coordinating mechanical, electrical, and software teams, advanced to quarterfinals at the Arizona Regional.

Skywalker Robotics Club | Founder | Auckland, New Zealand (Hybrid) *August 2018 – Present*

- Founded a community robotics club, delivering 700+ hours of CAD and embedded C++ training, mentoring 10+ teams to 8+ VEX World Championship qualifications, and providing ongoing troubleshooting and performance optimization support. Hosted STEM outreach workshops with 1,000+ attendees across four countries.