LIN JUNG PENG

(412)123-1234 • brucelin90620@gmail.com • www.linkedin.com/in/bruce-jung-peng-lin • https://brucelinweb.com

PROFESSIONAL SUMMARY

A Robotics Engineer specializing in autonomous systems, with expertise in SLAM, motion planning, sensor fusion, and computer vision. Proven experience taking projects from NVIDIA Isaac Sim simulation to embedded hardware deployment.

EDUCATION

Purdue University - Elmore Family School of Electrical and Computer Engineering *West Lafayette, IN*
Master of Science, Electrical and Computer Engineering *(expected) 05/2027*
Relevant Coursework: Computer Architecture(in progress), Introduction to Operating Systems(in progress)

National Taipei University of Technology (Taipei Tech) *Taipei, Taiwan*
Bachelor of Science, Mechanical Engineering *06/2023*
Relevant Coursework: Design and Practice of Control System, Digital Control, Introduction to Robotics, Intelligent Robots and Lab, Computer Organization, Data Structure, Operating Systems, and Computer Algorithms

SKILLS

Programming: C/C++, Python, MATLAB, Shell Scripting (Bash)
Robotics: ROS2/ROS, State Estimation, SLAM/VSLAM, Sensor Fusion, Computer Vision, Motion Planning, Control Theory
System Architecture & OS: Embedded Linux, Linux Kernel & Device Drivers, Communication Protocols (I2C, SPI, CAN)
Systems & Tools: Git, Docker, GDB, NVIDIA Isaac Sim, Airsim

EXPERIENCE

City Science Lab @ Taipei Tech, a cooperation with MIT Media Lab *Taipei, Taiwan*
Researcher – Promoted to full-time researcher after graduation to continue leading robotics projects. *07/2023 - 04/2025*

TSMC Industry-Academia Research Project: Boston Dynamics Spot

- Developed autonomous navigation for Spot's patrol of a 5,000m² factory with 50+ inspection points.
- Designed a dynamic map-switching system to resolve memory overload, enabling multi-zone navigation.
- Led the team in validating a mission planner in NVIDIA Isaac Sim before its successful deployment on hardware.

Foxconn Technology Industry-Academia Research Project: EVπ (Autonomous Vehicle)

- Integrated Foxconn's automotive-grade middleware (HHEV.OS) with the ROS2 control system.
- Improved sensor data throughput and stability for critical autonomous driving functions.
- Led an electronics overhaul, creating custom PCBs to replace unstable wiring and improve system resilience.

City Science Lab @ Taipei Tech, a cooperation with MIT Media Lab *Taipei, Taiwan*
Undergraduate Researcher, topic: Development of SLAM and Navigation System for Hexapod Robot *02/2023 - 07/2023*

- Fine-tuned Cartographer SLAM to generate high-fidelity 2D maps for autonomous robot navigation.
- Corrected LiDAR drift with an AprilTag visual system, enabling high-precision station docking.

Aeroprobing Inc., a drone solutions startup *Taipei, Taiwan*
Software Engineer Intern *11/2022 - 01/2023*

- Built an Airsim/ROS/YOLOv5 simulation to safely validate autonomous inspection algorithms.
- Achieved 10x YOLOv5 speedup on a Xilinx FPGA, enabling 30 FPS real-time obstacle avoidance.

SELECTED PROJECTS

Embedded Linux Smart Home Hub *Taipei, Taiwan*
05/2025 - 08/2025

- Developed custom kernel drivers/device trees for I2C, SPI, and GPIO modules.
- Designed a multi-threaded C++ (Qt) GUI with a HAL for responsive local control.
- Integrated MQTT/Wi-Fi for remote control and cloud data visualization.
- Built a minimal, secure, custom Linux system from scratch with the Yocto Project.
- Implemented robust A/B OTA updates and a hardware watchdog for system resilience.

Bio-Inspired Quadruped Bionic Robot (Pangolin, Triceratops) *Taichung, Taiwan*
07/2023 - 12/2023

- Achieved cm-level localization via VSLAM, performing 3D reconstruction and state estimation.
- Led circuit and control system development to replicate the pangolin's unique curling ability.

Autonomous Drone for Line-Following and Material Transportation *Taipei, Taiwan*
02/2022 - 11/2022

- Developed ROS-based planning and control policies to complete autonomous delivery tasks.