Zane Tsai

Software Engineer

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SUMMARY

Innovative and detail-oriented software engineer with an academic background in mechanical engineering and hands-on experience in robotics and automation. Experienced in designing UI for robotic arms and developing software for manufacturing automation flow and systems. Contributed to visual algorithm design during graduate studies. Passionate about transitioning into autonomous vehicles and robotic system design, leveraging a solid foundation in automation, control systems, and software

EXPEIRENCE

Software Engineer

Delta Electronics Inc.

📅 2023 – 2025   📍 Taipei, Taiwan

- Designed and developed a **smart manufacturing platform** to enable customers in diverse machining applications to quickly generate machining programs.
- Architected software using design patterns, ensuring maintainable and scalable solutions.
- Developed and simplified **hardware component APIs**, streamlining integration and improving efficiency in machining workflows.
- Designed, calibrated, and tested user interfaces, machining workflows, and systems to ensure reliability and high performance.

HMI Software Engineer

Syntec Technology Inc.

📅 2021 – 2023   📍 Hsinchu, Taiwan

- Developed and debugged robotic control software using C++ and C#.
- Designed user-friendly interfaces and integrated them with real-time systems to meet client specifications.
- Integrated image processing software with robotic arms, enabling hand-eye calibration and object tracking for precise manipulation of workpieces on conveyors.
- Verified and optimized application functionality through rigorous validation on physical robots and simulators.

PROJECT

Dynamic SLAM for Teleoperation

- Integrated deep-learning object detection with real-time SLAM, enabling 3D reconstruction in dynamic settings using C++ and Python under ROS.
- Evaluated system performance using RealSense RGB-D cameras, demonstrating improved trajectory accuracy.

EDUCATION

Master of Science in Mechanical Engineering

National Taiwan University

📅 2018 – 2021   📍 Taipei, Taiwan

Bachelor of Science in Mechanical Engineering

National Taiwan University

📅 2013 – 2017   📍 Taipei, Taiwan

SKILLS

 C#   C++   Python
 Git   ROS/ROS2

LANGUAGES

English — Advanced, TOEIC 900

Japanese — Intermediate, JLPT N1

Chinese — Native