Jonathan Tao

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EDUCATION

University of Illinois Urbana-Champaign   Champaign, IL
B.S. in Computer Engineering   ***Expected May 2028; GPA: 4.0/4.0***

EXPERIENCE

Illini Electric Motorsports   Champaign, IL
Embedded Software Engineer   *Aug 2025 – Present*
- Architecting the transition of the Battery Management System (BMS) firmware from a bare-metal environment to FreeRTOS to enhance real-time performance and scalability.
- Implementing advanced battery models to improve state-of-charge (SoC) estimation accuracy and enable more efficient regenerative braking and torque vectoring.

AbbVie   Abbott Park, IL
Analytical R&D Software Intern   *Jun 2025 – Aug 2025*
- Engineered and deployed an internal RAG support agent using LangChain, OpenAI API, and Power Automate, reducing information retrieval time for SOPs and equipment guides by over 50%.
- Developed a Python-based integration for the Microsoft Teams API, enabling seamless user interaction with the LLM-powered support agent directly within chats.

AbbVie   Abbott Park, IL
Comparative Medicine Intern   *May 2024 – Aug 2024*
- Spearheaded the deployment of a wireless camera system in a primate enclosure to enable continuous, autonomous data collection for preclinical research.
- Developed a PyTorch-based video classification model to automate the analysis of animal behaviors and social hierarchies from collected video data.
- Built and deployed Microsoft Power Apps to digitize laboratory procedures, enhancing data integrity and improving operational efficiency.

Freelance Computer Builder   Lincolnshire, IL
System Integrator   *Feb 2020 – May 2025*
- Engineered, sourced, and assembled over $11,000 worth of custom PCs, specializing in small form factor (SFF) and high-performance builds.
- Provided comprehensive client services, including consultation, system assembly, and deployment of Windows and Linux operating systems.

Daniel Wright Jr. High School   Lincolnshire, IL
Volunteer C++ and Python Teacher   *Aug 2019 – Aug 2020*
- Instructed over 100 students in core computer science concepts, including C++ and Python fundamentals, data structures, and algorithms.
- Designed a JavaScript-based automated grading tool for Google Classroom to parse and detect runtime errors, increasing grading efficiency.

PROJECTS

Custom CoreXY 3D Printer | *Autodesk Inventor, C++, Klipper, Raspberry Pi*
- Designed and constructed a high-performance CoreXY 3D printer from the ground up, featuring a rigid frame modeled in Autodesk Inventor and custom 3D-printed components.
- Configured Klipper firmware on a Raspberry Pi 4 to drive salvaged Ender 3 electronics, achieving high-speed printing at over 1500 mm/s with 7000 mm/s^2 acceleration.

W.A.N.D.E.R. Autonomous Robot | *C++, ESP32, Autodesk Inventor*
- Engineered a maze-solving autonomous robot featuring a custom 3D-printed chassis, integrating a gyroscope, wheel encoders, and distance sensors for robust localization.
- Implemented a C++ pathfinding and SLAM algorithm on an ESP32 microcontroller to efficiently map and navigate unknown maze environments.

SKILLS

Languages: C++, Python, Java, C, R, JavaScript
Frameworks: PyTorch, Svelte, LangChain, React, Pandas, NumPy, Matplotlib
Developer Tools: Git, Linux, Docker, Bash, Power Automate