

Travis Yu Chen

✉ tchen128@jh.edu | 📞 +1 (202) 910-8806

Education

Johns Hopkins University (JHU) - 3.93 GPA

B.S. in Computer Engineering + Computer Science

Minor in Financial Economics

Baltimore, MD

Expected May 2026

Expected May 2026

Montgomery Blair High School (MBHS) - 3.93 GPA

STEM Magnet High School Diploma

Silver Spring, MD

May 2023

Technical Skills

- **Languages/Frameworks:** C/C++, Java, Zephyr RTOS, FreeRTOS, CMake, ROS, ESP-IDF, nRF Connect, Git
- **Communication Protocols/Tech. Used:** WiFi, Bluetooth/BLE, I2S/I2C, SPI, Cellular IoT, UART, GNSS, UDP/TCP

Professional Experience

Junior Firmware Engineer Intern

Rapid Prototyping and Manufacturing Tech

May 2024 - Aug 2024

Forest Hill, MD

- Used a nRF52840 SoC with **Zephyr RTOS** in a wireless earbud to play, record, and stream audio data via **BLE** to diagnose early hearing loss in infants
- Integrated both the nRF52840 SoC and nRF9160 SiP onto an IoT wrist wearable with **Zephyr RTOS** to collect and send **GPS** fixes + customer vitals via **LTE-M** to a UDP Server
- Wrote a custom bootloader on an STM32 micro-controller using STM32CubeIDE which can perform In-Application Programming/Flashing on other STM32 micro-controllers across a **CAN Bus**
- Implemented error redundancy in the custom bootloader by implementing ACK messages, timeouts, retries, and CRC in order to minimize flash errors

Biomedical Research Intern

Catholic University of America

June 2022 - Sept 2022

Washington, DC

- Developed a 2 degree-of-freedom hand exoskeleton to help stroke survivors rehabilitate impaired hand limbs using SolidWorks, and implemented part modularity to accommodate different hand sizes
- Recorded experimental data on exoskeleton performance with an Arduino Uno microcontroller and presented research findings at a research convention

Extracurricular Experience

Embedded Software Engineer

JHU Blue Jay Racing: Baja SAE

Sept 2023 - Present

Baltimore, MD

- Designed a **WiFi/MQTT** communication system between a central Raspberry Pi and ESP32 micro-controllers with C/C++ to record and collect real-time axle strain data for future design analysis
- Used FreeRTOS to simultaneously record data with a 16-bit ADC and transmit data with WiFi with interrupts to achieve up to 95% of the maximum data sampling rate
- Utilized a lightweight version of Google Protobuf to serialize outgoing wireless data and achieved transmission speeds of 8kB/sec with BLE and 75 kB/sec with MQTT per micro-controller

Mechanics Project Lead

The Blair Robot Project

Sept 2021 - May 2023

Silver Spring, MD

- Managed a 5-person design team tasked with building hardware mechanisms using Autodesk Inventor for the FIRST Robotics Competition
- Developed a 1-degree-of-freedom claw that grabbed game pieces to maximize robot scoring potential, and the final competition robot qualified to compete at the 2023 FIRST World Championship
- Designed and fabricated a wiffle-ball-shooting robot used to inspire elementary school children at local STEM outreach events