Alexander Kang

Evanston, IL

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Education

Northwestern University   *Evanston, IL*

B.S. Candidate in Computer Science, McCormick School of Engineering | GPA: 3.7   *Class of 2024*

- Relevant Coursework: Microprocessor System Design; Electronics System Design; Wireless Protocols for the Internet-of-Things; Internet-of-Things Sensors, Systems, and Applications; Distributed Systems; Design & Analysis of Algorithms; Data Structures & Algorithms

Experience

Tesla   *Palo Alto, CA*

Incoming Firmware Engineering Intern   *Mar. 2024*

- Joining BMS firmware team in the spring of 2024

Siemens Healthineers   *Hoffman Estates, IL*

Electrical Engineering Intern   *Jun. 2023 - Present*

- Developing embedded robot arm software for SPECT molecular imaging with **C** for a TI C2000 series MCU
- Developing a desktop GUI app using **GTK** and **C** for a touchscreen interface on a locker to store equipment in

Northwestern Formula Racing   *Evanston, IL*

Sensor & Data Acquisition Lead   *Jun. 2022 - Aug. 2022*

- Part of a 50+ member student organization that designs, builds, and races a formula-style car for the annual FSAE competition
- Worked with stakeholders on other subteams to select sensors for the 2022-23 FSAE car based on user requirements
- Designed a newly modularized main data acquisition board that collects raw sensor data from daughter modules across the car, converts it to a readable form, and sends it to the telemetry board
- Designed, breadboarded, and programmed (**C++**) the telemetry board that sends data to base stations and stakeholders around the track

Global Shop Solutions   *The Woodlands, TX*

Programmer/Analyst Intern   *Jun. 2022 - Aug. 2022*

- Analyzed user requirements and designed new user-friendly interfaces using **Visual Basic**
- Converted old user interface forms from COBOL to Visual Basic using the DevExpress tool and the **.NET Framework**

Northwestern University Computer Science Department   *Evanston, IL*

Undergraduate Teaching Assistant   *Mar. 2022 - Present*

- Assisting the Intro to Computer Systems course, most undergraduates' first exposure to the topic
- Tutoring students on various topics in computer systems, **C** programming, **x86 assembly**, **Unix**, and low-level hardware
- Holding weekly office hours, discussion sections, and grading homework & exams

McCormick School of Engineering PC Support   *Evanston, IL*

Computer Consulting Aide   *Sep. 2021 - Jun. 2023*

- Designed/implemented a desktop GUI app using the **Tauri** toolkit (**Rust**) to automate file transfers across the computer lab network
- Troubleshooted malfunctioning systems and hardware & reimaged systems to be installed in labs
- Assisted the Engineering First Computer Labs Administrator in maintenance and support of 5 computer labs

Northwestern Formula Racing   *Evanston, IL*

Data Acquisition Project Lead   *Sep. 2021 - Jun. 2022*

- Led a 3 member team that designed (**Autodesk EAGLE**), prototyped, and programmed (**C++**) the 2021-22 FSAE car's data acquisition system
- Reduced the size of the main data acquisition PCB by 22% while maintaining functionality & implementing a GPS

Projects

ARMv7 Assembly Pong

Showcase Link   *Mar. 2022*

- Designed and implemented a clone of the classic game Pong in **ARMv7 assembly** with some additional fun twists

Skills

Technical Skills   C, Rust, C++, JavaScript, Python, assembly language (x86 & ARMv7), Autodesk EAGLE, KiCad

Other   Unix, Git, Linux, wireless protocols (BLE, LoRa, 802.15.4, WiFi), electronics assembly/prototyping