

Alexander Kang

Evanston, IL

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Education

Northwestern University

Evanston, IL

B.S. CANDIDATE IN COMPUTER SCIENCE, MCCORMICK SCHOOL OF ENGINEERING | GPA: 3.73

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; Data Structures & Algorithms

Experience

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

- Assisted the Engineering First Computer Labs Administrator in maintenance and support of 5 computer labs
- Designed/implemented a desktop GUI app using the **Tauri** toolkit (**Rust**) to automate file transfers across the computer lab network
- Assisted the media support team in maintenance and support of 8 classrooms
- Troubleshooted malfunctioning systems and hardware & reimaged systems to be installed in labs

Northwestern Formula Racing

Evanston, IL

DATA ACQUISITION PROJECT LEAD

Sep. 2021 - Jun. 2022

- Led a 3 member team that designed (**Autodesk EAGLE**), manufactured, tested, 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 a clone of the classic game Pong with some extra twists to run on the CPULator computer system simulator
- Implemented the design in **ARMv7 assembly** using bitmaps to render sprites

Flappy Bird Clone

SHOWCASE LINK

May 2021

- Used **C++** to create a playable Flappy Bird clone with increasing difficulty that tracks the player's score
- Wrote multiple unit test cases to test functionality of various sections of source code

Skills

Technical Skills	C, Rust, C++, JavaScript, Python, assembly language (x86 & ARMv7), Autodesk EAGLE
Other	Unix, Git, Linux, electronics assembly/prototyping
Interests	Sustainability, computer hardware, music