Isaac Kim

(419).481.3034 | isaackim2024@u.northwestern.edu | https://www.linkedin.com/in/isaac-d-kim | https://github.com/ikim-2001

EDUCATION

NORTHWESTERN UNIVERSITY **Evanston, IL**

Bachelor of Science in Computer Science, Minor in Music Composition (Jun 2024) *GPA: 3.80/4.00*

- **Relevant Coursework:** Data Structures & Algorithms, Fundamentals in Programming (OOP), Programming Languages, Computer Systems, Artificial Intelligence, Game Design & Development, Microprocessor System Design
- **Activities:** Northwestern Formula Racing, Asian American Intervarsity, Korean American Students Association

SKILLS

- **Programming Languages:** Python, C, C#, C++, JavaScript, MATLAB, SQL, Java
- **Frameworks/Tools:** HTML/CSS, Django, Flask, React, Firebase, AWS ElasticBeanstalk, AWS Amplify, AWS Lambda, DynamoDB, Amazon API Gateway, OpenCV, NumPy, SimPy, Imutils, Docker

PROFESSIONAL EXPERIENCE

AWS Backend Project Lead **Evanston, IL**

Northwestern Formula Racing Club *Sept 2020-Present*

- Leading a team of Northwestern engineers to send sensor data from base station to cloud to frontend by using serverless AWS API Gateway to handle queries and deliver responses
- Creating AWS lambda functions in Python to retrieve, store, and update sensor values of the car in real-time, selected time intervals, and historic data stored in AWS DynamoDB database
- Previously designed a prototype method to display telemetry of 140 battery cells read from ESP32 microcontroller to a web server by using HTML/CSS/JavaScript

Software Engineer Intern **Evanston, IL**

Renota *Mar 2022-Aug 2022*

- Built EdTech startup's landing and demo pages with HTML, CSS/Bootstrap, JavaScript/jQuery frontend and Django backend as the company's sole software engineer
- Deployed 4 live iterations of demo and landing pages via AWS Elastic Beanstalk, which were displayed at three pitch competitions and helped win $22,000 to fund 6 more manual pilots with local high schools in Chicagoland
- Fetched Mathpix Object Character Recognition (OCR) API to convert 200+ images of uploaded handwritten math work to digitized text on React web app deployed with AWS Amplify
- Parsed JSON metadata outputted from OCR React App and designed an algorithm-based solver running in Flask to pinpoint mathematical errors in students' Algebra I work with 89% accuracy

Computer Vision Undergraduate Researcher **Evanston, IL**

Technological Innovations for Inclusive Learning and Teaching (TIILT) Lab *May 2021-Present*

- Implementing an alternative method for students with visual impairments to play Minecraft by analyzing 3D structures of 1-inch cubes placed under a webcam using the OpenCV, NumPy, and imutils libraries in Python
- Detecting displacements of blocks within an 8x8x8 space by filtering each object's contour with 3 adjustable HSV color trackbars and image subtraction heuristics
- Formatting blocks' XYZ coordinates into JSONs and sent to a live Minecraft server for respective blocks to spawn in-game

Software Engineer Intern **Toledo, OH**

American Chemical Society *Jun 2019-Aug 2021*

- Programmed in C/C++ for a robotic mechanism to autonomously perform thin-film microextraction concurrently on 6 wastewater samples (currently undergoing patent/research paper publication)
- Implemented an HC-05 Bluetooth interface to allow for a preexisting Android App to send serial inputs to Arduino Nano powered by a rechargeable, 12V 2000mAh lithium-ion battery

PROJECTS/LEADERSHIP

SpotifyPlus *(HTML, CSS, React, Firebase)* *Aug 2022-Aug 2022*

- Implemented a Spotify clone in React where any one of 182 million current users can login and stream music or podcasts
- Enabled access to over 80 million tracks, 2,100+ liked songs, and 360+ personal playlists by syncing login information with user authentication system and Spotify for Developers Web API
- Added a chat feature for users to be able to directly communicate with their friends on the SpotifyPlus platform

Peer Mentor for COMP SCI 110: Introduction to Programming **Evanston, IL**

Northwestern University *Mar 2022-Jun 2022*

- Led weekly tutorial sections to 12 students and office hours open to all students both in-person and virtually for 6 hrs/week
- Answered assignment and project questions on an online class forum of 120+ students 2-3 times per week

AWARDS

Incoming Software Development Engineering Intern **Seattle, WA**

Amazon *Jun 2023-Aug 2023*