Adam Ebrahim

4042 Water Willow Lane, Hoover, AL 35244 | (205)-541-2074 | adamaebrahim@gmail.com
www.linkedin.com/in/adam-ebrahim-120799214 | Website: adamebrahim.tech

Education

Duke University, Durham, NC — August 2021 – Current (Expected May 2024)
A. James Clark Scholar

- Majors: *BSE in Electrical and Computer Engineering, Double Major in Computer Science* (GPA: 4.0)
- Courses: Data Structures/Algorithms, Computer Architecture, Design/Analysis of Algorithms, Signals & Systems

Work Experience

Duke University Code+ — May 2022 – July 2022
Full-Stack Software Engineer Intern

- Developed a web application for Duke University to enable students to more easily build their class schedules for future semesters while being able to visualize relevant data.
- Created RESTful backend API to allow users' selected courses to be stored in a database for future accessing.
- Designed relational database table structure to hold user data and course information.
- Automated processes for parsing XML files containing class information and inserting/updating them into database to ensure courses are up to date.
- Increased speed of building schedules through user-friendly website design.
- Utilized React.js for the frontend, with a Ruby on Rails backend REST API and PostgreSQL database.

Projects/Activities

AI Squat Assist Device

- Building a device that uses Mediapipe's Holistic machine learning model and Tensorflow GPU inference to monitor a squat in real-time while providing visual/audio cues, form improvement feedback, and other analysis.
- Developed squat-state transition logic based on angles between inferred limb landmarks.
- Implemented real-time cues based on pose inference to notify user when they reach proper squat depth.
- Utilizing NVIDIA Jetson Nano microprocessor with CUDA, Python, Mediapipe, Tensorflow, and OpenCV.

Workout Generator Website

- Developing a web application to generate custom, weekly workout routines based on user-input settings.
- Built a RESTful backend API using Go to access exercise info stored in a database.
- Created backend logic to return an individualized weekly workout plan utilizing exercises from the database with generated sets/reps, rest times, and more.
- Implemented Redux library to store state globally in the frontend, allowing easier access of the data.
- Utilized CI/CD pipelines to ensure the app functions smoothly in development and production environments.
- Deployed app through Heroku with a React/Redux frontend, Golang backend, and Postgres database.

Arduino Robot

- Used an Arduino microcontroller and other electrical components to build a functioning robot that could perform line following, object detection, color sensing, and communication with other robots.
- Discovered best practices for writing efficient Arduino code and for wiring/working with sensors.

Game Development

- Developed a Jeopardy trivia game on the online platform Roblox using the programming language Lua.
- Learned about client-server models in game development.
- Created reusable module for smoother camera rotations and paths during cutscenes using mathematical concepts such as spline interpolation.

Skills

- **Languages**: Java, Go, C, Python, JavaScript, Lua, Ruby, SQL, HTML, CSS
- **Frameworks/technologies**: Git, React/Redux, OpenCV, Microprocessors, TensorFlow, Ruby on Rails, Postgres