

LEE JOHNSON . *Electrical and Software Engineer*



LeeJavaaa



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Cape Town, South Africa

KEY SKILLS

software

- C, Assembly, Python, JavaScript, Java
- Django, Firebase Solidity
- React, React Native, Next, Tailwind, Bootstrap
- sklearn, OpenCV, Librosa

electrical

- Embedded Programming
- MATLAB, Simulink
- Circuit Design (hand or sim), LTSpice, ngspice
- LaTeX for reporting and documentation

TECHNICAL EXPERIENCE

Software Engineering Intern *Skywalk Innovations*

06/2022-07/2022

- Greatly reduced client tender search time by implementing a periodic web crawler with website frontend, automating their previously manual workflow.
- Gained a fundamental understanding of project management processes, agile development and scrum, and working in a large team to coordinate development efforts.

TECHNICAL PROJECTS

Remote Control Car with Object Detection

Individual, University Course

Circuit Design, LTSpice, C, Python, React JS, Tailwind CSS, Arduino

- Designed, built and tested a remote controlled car with object detection in both hardware and software.
- Designed and implemented an ultrasonic range sensor circuit in both hardware and software for object detection and avoidance.
- Built a full monitoring system, providing data on current drawn, object range and battery voltage levels.
- Used Bluetooth connection protocol with a python django backend, connected to a react frontend styled with tailwind to create a GUI for controlling the car remotely.

Digital Multimeter and Signal Generator

Individual, University Course

Circuit Design, LTSpice, C, STM32

- Design, built and tested a digital multimeter and signal generator using a STM32 microcontroller as the central hub.
- The digital multimeter can measure both DC and AC Voltage as well as current within at least 5% accuracy
- the system also acts as a signal generator that can produce a DC, sinusoidal or pulse waveform
- Built a user control system using push buttons and LEDs for debugging, combined with a LCD display that provides a menu, activates to multimeter or signal generator and can set the parameters of the multimeter or generator.
- Also built a serial communication interface that can control the system, in place of the LCD and button control method.

Untitled: Mobile Application with Blockchain

Team (3), Independent

React Native, Tailwind, Firebase, Solidity, Ethereum, C

- Lead a team of 3 in the design, building and testing of a mobile application that interfaces with RFID tags and the Ethereum blockchain to prove the authenticity of sneakers.
- Designed the overall architecture and oversaw the development in the mobile application, hardware-firmware RFID components and was the main developer for the blockchain smart contracts
- Built an NFT-based authentication system using smart contracts on the Ethereum blockchain, with Alchemy and IPFS
- Built a mobile application frontend with React Native and Tailwind CSS and connected it to a backend using Firebase

WhatsBuzzing: Mobile Application

Individual, Independent

React Native, Tailwind, Firebase

- Launched a mobile application for a two week beta that provided real time updates of night club and bar activity to students in Stellenbosch.
- I designed the UI / UX and implemented the mobile application frontend using React Native and Tailwind
- I implemented a backend using Firebase, building in a NOSQL database and google analytics to track application usage.
- The app was deployed on the App store and Play store and received over 100 downloads in the first week.

EDUCATION

University of Stellenbosch

BEngHons. Electrical and Electronic Engineering

2020-2023