

Belal Zahran

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EDUCATION

University of California, Irvine: GPA: 3.5 / 4.0

September 2020 - June 2024

B.S. in **Computer Science**

Dean's Honor List

Relevant Coursework: Intro to C++ (I, II, III), Computer Organization, System Design, Concepts in Programming Languages, Graph Algorithms, Data Management, Software Engineering, Algorithms, Data Structures, IOT Systems, Embedded Programming

PROFESSIONAL EXPERIENCE

AONDevices

Nov 2024 - Current

Software Engineering Intern

- Utilizing libraries like **React** and **Node.js** to implement debugging features into **full-stack** AON360 Codebase
- Working with **Embedded RCU's** to enable OTA firmware updates and seamless two-way connection with the client device
- Developing **Python** scripts to speed up common workflows, achieving a nearly **2x** efficiency increase in standard test procedures
- Conducted in-depth evaluations of various Text-to-Speech solutions to identify optimal models for integration into AON360 codebase

Karma Automotive

June 2023 - September 2023

Powertrain Controls Software Intern

- Developed an automated VIN-flashing tool using **Python** to reducing vehicle flashing times by **30%**
- Designed a harness using a **CAN-bus reader** and **python-can** library resulting in Karma's first consumer friendly flashing method
- Implemented features such as password protection, flashing history, legal VIN verification, and automated key encryption access
- Worked on the calibration of the Powertrain Control Unit and conducted torque diagnostics to increase initial torque on vehicles
- Performed analysis on Karma's software models, reviewing and documenting variables to support the migration to AUTOSAR

Kumon

September 2023 - December 2023

Contract Software Developer

- Developed a digitized check-in system using **Flask**, pioneering the Kumon Center's first online homework tracking system
- Designed and managed a database using **MySQL** and **MySQL workbench** to keep records of **200+ students**
- Implemented **two** user friendly **GUI** using **HTML**, **Javascript**, **CSS**, and **Python** to reduce record look up time by **50%**
- Incorporated automated messaging services using **Twilio API** to foster better communication with parents
- Handled all communications with the client discussing functional and non-functional requirements

PROJECTS

Automated Medication Dispenser (C++, HTML, CSS, JavaScript, ESP32)

- Designed and developed a 3D-printed automated medication dispenser using an ESP32 as the main microcontroller
- Integrated Firebase for hosting services and cloud database for streamlined, easy user access
- Implemented user interface using HTML/CSS/Javascript for real-time control and monitoring of user analytics

LED Prayer Times (C++, ESP32, FastLED, aladhan API, AWS)

- Developed a real-time visual display of prayer times on an LED strip using an ESP32, programmed with C++ and FastLED library
- Integrated the Aladhan API to dynamically fetch and adjust daily prayer times, accounting for seasonal changes.
- Built and hosted a web interface on AWS, allowing users to update and customize settings remotely.

SKILLS

Programming Languages: Python, C++, C, Java, TypeScript

Machines/Hardware: Microcontrollers (STM32, Arduino, ESP32, ATmega32), Raspberry Pi, Soldering, Firmware, Schematics, Circuits

Frameworks & Tools: Flask, Node.js, React.js, Windows, MacOS, Linux, bash, GIT, MySQL, MongoDB, SSH, REST APIs, Firebase, AWS, Google Cloud, Docker, Platformio, Arduino