Belal Zahran

belalzahran@gmail.com | belalzahran.com| (949) 910 7415 | linkedin.com/in/belal-zahran-957886210/ | github.com/belalzahran

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

Computer *Engineering Intern*

- Utilized frameworks like **React** and **Node.js** to implement debugging features into AON360 Codebase to increase testing efficiency
- Worked with **Embedded RCU** development to enable OTA updates of firmware and seamless two-way connection with the host
- Developed **Python** scripts to speed up common testing workflows, achieving a **20%** efficiency increase in standard test procedures
- Conducted in-depth evaluations of various Text-to-Speech solutions, identified the optimal model, and integrated it into AON360

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 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