Mugared Khalifa

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EDUCATION

- **University of California Irvine** | Bachelor of Science in Computer Science and Engineering. Sept. 2017 – Jun. 2021
  - Graduated with Cum Laude honors.
- **University of California Irvine** | Master of Science in Computer Science. Expected Jun. 2023
  - Coursework: Introduction to AI, Machine Learning, Scientific Computing, Probabilistic Learning.

EXPERIENCE

- **Software Engineer Co-Op, Skyworks Inc.** Jun. 2021 – Present
  - Researched and architected services on Azure for storing and retrieving attachments on the cloud for multiple applications.
    - Augmented an Azure Function API to add more file operations and optimized it to decrease its runtime cost by 50%.
    - Created a migration utility for three applications to migrate 500K+ files for each.
    - Retrofitted 3 custom .NET web applications to use Azure Storage for uploading attachments to improve disaster recovery.
    - Developed a client library to abstract using the attachments API for file operations for the ease of use by clients.
    - Automated Storage container deployment using PowerShell scripts and XML files to decreases hands-on deployment time to a click.

- **Software Engineer Intern, Bridge Diagnostics** Jan. 2021 – Apr. 2021
  - Automated workflows using Azure tools and wrote backend programs for MS SQL for frontend use.
    - Used Power Automate Flows to parse CSV and XLSX files using Pandas to add their data to the corresponding MS SQL database.
    - Created a web scraping app using Selenium running on an Azure function to produce a list of unprocessed orders for our sales team.
    - Adjusted an automation flow to add an approval process from our VP sales team before processing an order request.
    - Developed an order management system using MS Forms and Lists used for internal supply chain management.

- **Software Engineer, Vena Vitals** Jul. 2020 – Apr. 2021
  - Collaborated on developing a Blood Pressure monitoring device.
    - Increased the update rate of a Python Desktop app used for graphing by a factor of 5 times by tuning the graph update method.
    - Added a BLE backend to an iOS app in Swift to connect to a custom PCB and retrieve data from it to be graphed in real time.
    - Amended nRF firmware in C using ARM Cortex-M4 architecture to support additional PCB sensors by multiplexing via I2C.

EXTRACURRICULARS

- **Professional Development Events Planner** Dec. 2019 – Jun. 2021
  - Professional events planner for IEEE-Eta Kappa Nu.
    - Plan and facilitate professional events centered around career development for 50 students in our chapter.

- **UCI Engineering Conference Co-Chair** Feb. 2020
  - Volunteered to lead the Electrical Engineering and Computer Science subcommittee.
    - Guided and motivated twenty-four participants through their design report during the initial stages of the conference.

- **UCI Engineering Conference** Feb. 2019
  - Succeeded in leading a team to build a concept for a Sky Farm and won first place.
    - Created a concept from scratch for a self-sustainable vertical farm to increase farming's efficiency in three days.

PROJECTS

- **Embedded Systems Engineer – HyperXite at UCI** Jun. 2020 – Jun. 2021
  - Research and architect the embedded system and software of our pod for the SpaceX Hyperloop competition.
    - Researched and chose microcontrollers and sensors to control the pod for the FSM state transitioning.
    - Design the Finite State Machine that will operate the pod in a semi-autonomous state.
    - Communicate with other subsystems to make sure our design is concurrent with their constraints.
    - Develop a desktop application to display the current state of the pod with sensor readings and give control over the pod via a NAP.

- **Undergraduate Researcher | Software Engineer – CalPlug UCI** Jan. 2020 – Jun. 2021
  - Developed Application and Embedded Software under the CalPlug UCI Research Facility.
    - Extended the WiFiManager library for the ESP32 to save MQTT/WiFi credentials and handle automatic connections and failures.
    - Augmented and refactored a module that performs regressions to save the result in EEPROM and decreased its size by 10%.
    - Created a GUI in Python to interface with a camera and control the lasers of a medical device via Serial.

- **Kaggle Competitions**
  - Created a Decision Tree model to predict rainfall using cloud data and achieved 2nd place amongst 50 students in in-class competition.

SKILLS

- Programming: Python, C/C++, C#, .NET, Java, Swift, MySQL | NumPy, SciPy, Matplotlib, PyQt5, CV2.
- Platforms: MacOS, Windows, Linux, Azure DevOps, Docker, Git, TFS, SSMS.
- Azure: Blob Storage, Azure Functions, Azure APIM, Azure AD, Azure Key Vault, Power Automate, Power BI.
- Machine learning: CNN, Neural Networks, SVM's, Random Forests | Keras, Sklearn, Tensorflow.