**Case Zumbrum**

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**PROFESSIONAL EXPERIENCE**

**MRSL REAL-TIME SYSTEMS LABORATORY Sarasota, FL**

**Software Engineering Intern May 2024 - August 2024**

* Created full stack web app (FastAPI, React, SQL) for use within the signal processing field
  + App is still in use by MRSL, and will be released as a full product to customers
* Created Typescript module for generating React components based on Pydantic models
* Handled over 10,000 editable React components with zero noticeable performance decreases
* Performed presentation and demo both internally and to customers

**MACHINE INTELLIGENCE LAB Gainesville, FL**

**Software Team September 2023 - January 2024**

* Worked on international award winning MIL software team to develop and test programs for Subjugator 8 Autonomous Submarine

**INTER RESIDENCE HALL ASSOCIATION Gainesville, FL**

**Infinity Hall Operations Manager August 2023 - May 2024**

* Worked with university housing to advocate for permanent change at Infinity Hall
* Successfully hosted many events with a total attendance of over 300 participants

**EDUCATION**

**UNIVERSITY OF FLORIDA Gainesville, FL**

***Bachelor of Science, Major in Computer Engineering* August 2023 - May 2027**

* Benacquisto Scholarship Recipient
* National Merit Scholarship Finalist and Recipient

**PROJECTS**

**QUALITY ENTERPRISES INVENTORY APP***, AWS Lightsail, MongoDB* **2024**

* Facilitated transfer of Quality Enterprises web app into the AWS cloud
* Handled interaction between AWS Lightsail instance and MongoDB Atlas cluster to load data into app
* Successfully handled over 1000 concurrent users without loss of data

**VIRTUAL TURLINGTON**: **UF OSC Mini-Hack***, Github, MongoDB, Express, React, Node.js, Python*  **2024**

* Built full stack MERNP (MongoDB, Express, React, Node.js, Python) app that stores/displays UF club data
* Utilized cloud based MongoDB Atlas to store UF clubs, as well as using this database to populate the app
* Provided an online space for UF clubs to virtually table and advertise their events

**E-PAPER WEATHER DISPLAY***, MicroPython, Raspberry Pi Pico, Fusion360* **2024**

* Created a live weather info display utilizing an E-Paper screen and a Raspberry Pi Pico W running micropython
* Designed housing for screen and RPI Pico using Fusion 360, and successfully printed/assembled product

**SLIME MOLD SIMULATION***, Python, Numpy, Pandas, Numba*  **2023**

* Created a Python program that attempts to solve the traveling salesman problem by simulating behavior found in slime molds by creating thousands of intelligent agents interacting with each other
* Configured Numba library to decrease simulation time by 50% using GPU-accelerated calculations
* Utilized Pandas and Numpy libraries to perform calculations on large sets of data

**CAT FACTS APP***, Python, Twilio* **2023**

* Created Python app that used Twilio API to send out random daily cat facts to all registered users
* App was used by several students at Gulf Coast High School, and had no issues with scaling

**SKILLS**

* Technical Skills: Linux, Python, JavaScript, TypeScript, React, Java, Node.js, Express, C++, PHP, SQL, Mongo, Fusion360
* Certifications: Internet Business Associate, Fusion360