Marco Acea

About

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Programming Languages

Python Golang C HTML/JS/CSS System Verilog

Software/Frameworks

Selenium Django Kubernetes Google Firestore Argo CD

Experience

Intuit
05/2020 - Present

Software Engineering Intern

- Summer 2022: Returning intern working with the API Mangement Platform team
- Summer 2021: Developed new feature for the ArgoCD project that allows non-admin users to safely create Applications and Projects for themselves within a Kubernetes cluster.
- Summer 2021: Built a Kubernetes custom resource definition that combines Kubernetes' Role Based Access Control System with custom admin defined Project Specifications to manage ArgoCD configurations for non-admin users.

23andMe
07/2020 - 09/2020

Software Engineering Intern

- Developed user interface for internal hosting service with the Application Infrastructure Team
- Built Flask app that uses Flask API endpoints to display information about applications (statuses, teams, owners, authentication tokens, etc.)

Projects

PD Temperature and FSM Rollercoaster Controller
01/2022 - 05/2022

Fundamentals of Embedded Control

- Developed a Proportional-Derivative controller that approaches and holds a desired temperature within a closed chamber
- Developed a finite state machine controller that manages model rollercoaster carts through the track
- Designed electrical circuit and built testbenches for both controllers

ArgoCD AppSource Controller
05/2021 - 08/2021

- Kubernetes Custom Resource Definitions that gives under-privelaged users permission from admins to create ArgoCD applications automatically
- Supports multiple ArgoCD Project "profiles" that limit what actions sub-users can make with their application.
- Currently going through adoption proccess for the argo-proj-labs collection of vetted community projects

UART/I2C Controller and Real Time Kernel
01/2021 - 05/2021

Intro to Embedded Systems

- Used Memory Mapped I/O (MMIO) to build UART and I2C peripheral drivers
- Built an acoustic "clap" detector that runs on the STM32 Nucleo Board using I2C for acoustic data and UART to print sensor data to the console
- Designed multi-threaded Real Time Operating System (RTOS) with context switching, mutexes, and enforced fixed priority scheduling.

Malloc and Unix Tiny Shell
08/2020 - 12/2020

Intro to Computer Systems

- Implemented dynamic memory allocation library in C using both explicit and segregated free lists

Education

Carnegie Mellon University
08/2018 - 12/2022

Bachelor's of Science in Electrical and Computer Engineering

- Structure and Design of Digital Systems

- Signals and Systems
- Web App Development
- Intro to Computer Systems
- Intro to Embedded Systems
- Fundamentals of Embedded Control