

Marco Acea

About



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marco-acea



aceamarco

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 Management 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.)

Open Source Projects

PD Temperature Controller

01/2022 - 05/2022

- Developed a Proportional-Derivative controller that approaches and holds a desired temperature within a closed chamber
- Designed electrical circuit and built testbench temperature chamber alongside a graphical interface to analyze PD controller performance

FSM Controller Rollercoaster

01/2022 - 05/2022

- Developed a finite state machine controller that manages model rollercoaster carts through the track
- Designed sensing and actuating system/circuit on Eagle for model rollercoaster

ArgoCD AppSource Controller

05/2021 - 08/2021

Golang Kubernetes ArgoCD

- Kubernetes Custom Resource Definitions that gives under-privileged 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 process for the argo-proj-labs collection of vetted community projects

UART and I2C Controller

01/2021 - 05/2021

- 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

Real Time Kernel

01/2021 - 05/2021

- Designed and built my own multi-threaded Real Time Operating System (RTOS) with context switching, mutexes, and enforced fixed priority scheduling.

Malloc

08/2020 - 12/2020

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

Unix Tiny Shell

08/2020 - 12/2020

- Developed my own Unix command line shell program with support for foreground and background job control using parent/child process control and signal handlers

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