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Roth Vann

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EDUCATION

University of California, Riverside **2018 – 2022**

- Bachelor of Science, Computer Science

EXPERIENCE

Software Engineer, Intern **Applied Medical** **Summer 2017**

- Developed an algorithm to detect completion of a surgery training module using OpenCV
- Used JNI to package a C++ application

Software Engineer, Intern **LASERGRAPHICS Inc.** **Summer 2018**

- Worked on a system to digitally correct scans of film with dust or other damage
- Designed and implemented code to remove leakage of visible dyes into infrared scans
- Used OpenCV to design and test various correction methods

Programming Lead **FIRST Robotics (FRC) Team 3476** **Spring 2016 – Spring 2018**

- Developed code for robot movement of a variety of systems including elevators, turrets, arms, and differential drives
- Wrote low level networking code to enable communication between devices in Java and C++
- Designed and implemented code for scheduling and multithreading of control loops
- Independently implemented a path following algorithm that heavily impacted our team's performance
- Team ranked in the top 1% of 5,000 teams globally and has won 4 World Championship divisions

Projects

Pose Estimation Application (2018-2019)

- Built a publish subscriber system for modularity and multithreading of nodes in C++
- Calculation of odometry through using fiducial tags (AprilTags)
- Uses CMake as a build system

Housing Price Webscraper (2020) HackUCI 2020

- Uses Scrapy to scrape online websites to track average cost of housing in cities and data on job availability
- Backend processes data and displays average cost, salary ranges for each city and job
- Deployed to Azure

PenPal Application Backend (2020) Winner of IVCHacks 2020

- Created a messaging app that matches users with other users randomly considering language constraints
- Fully functioning authentication and messaging system using PostgresQL
- Deployed to Google Cloud

RTMP Streaming Server (2020)

- Implemented the RTMP protocol in pure Node.js
- Uses FFmpeg to transcode incoming video to HLS for livestreaming
- Supports multiple concurrent streams and recurrent thumbnail generation
- React frontend to display streams (In progress)

Languages and Technologies

- C++, C, Java, JavaScript, Node.js, Express.js, React, Python, PostgreSQL, SQL, OpenCV, Linux, CMake, Maven, GCP, Azure