JOSHUA SANTILLAN

Computer Science Professional
Expected Graduation: March 2023

T: (760) 561-2193
E santj96@gmail.com
L: linkedin.com/in/joshuasantillan
G: github.com/joshuasantillan

OBJECTIVE

Transfer student at UC San Diego pursuing a BS in Computer Science seeking to apply programming knowledge and experience to an engineering position at an industry-leading company.

EDUCATION

University of California, San Diego

- B.S. in Computer Science (GPA: 3.6)

Victor Valley College

- A.S. in Computer Information Science & Mathematics (GPA: 3.6)
- Unix Administration Certificate
- Network Specialist Certificate

SKILLS

Algorithmic Analysis, Arduino, Assembly (x86/ARM), Bash Scripting, C++, Collaboration, Data Structures, Debugging, Design Patterns, GIT, HTML/CSS/JSX, HTTP request methods, Interpersonal Skills, Linux/PowerShell, Multithreading, Network Protocols, Python, React, Risk Mitigation, RDBMS, SQL, Unit/Integration Testing

COURSEWORK

Advanced Data Structures
Computer Animation
Computer Graphics II: Rendering
Computer Security
Design & Analysis of Algorithms
Operating Systems
Software Engineering
Networked Services

INVOLVEMENT

TEAM Mentor 2022
(SHPE) Society of Hispanic Professional Engineers
Engineering Transfer Prep Program 2020

EMPLOYMENT

Research Intern - Systems & Networking, UCSD Sept 2022 - Current

Geographically optimizing datacenter workloads

- Constructed an MQTT ingestion pipeline of Gradescope submissions
- Stored authenticated submission records in a PostgreSQL database
- Built an execution pipeline to pull records from the database and execute autograder workloads in Docker containers on a local cluster
- Recorded power consumption of overall process to provide insight into energy-efficiency computing

Edge-Cloud Data Migration Research - UCSD CSE *Jun 2022 - Sept 2022*

- Web Scraped ISO Power-Grid data and captured it using PostgreSQL
- Analyzed and correlated current carbon intensity dips and renewable generation peaks across different ISOs/regions
- Created an API to return total carbon intensity of a particular datacenter in respect to its power grid location
- Focused on reducing overall overhead and energy usage/carbon emission with the goal of reducing operating costs

Research Analyst - UCSD *Jun 2021 - Aug 2021*

- Formulated regression models with *Pandas*
- Focused on seeking disparities between transfer & minority student data
- Data involved sense of belonging, grades & motivation.

Math & CS Tutor - Victor Valley College *Aug 2018 - Jun 2020*

- Guided students through their coursework to bolster their knowledge
- Specialized in helping students with Databases, C++, Front-End Web Development, and Operating Systems
- Offered help in a vast range of mathematics from basic math skills to differential and multi-variable calculus.

Engineer Instructor - Innovation Academy *Nov 2018 - Nov 2019*

- Assisted in developing adaptable coding assignments
- Mentored 25 homeschooled students in computer science topics
- Topics Included: conditional logic, functions, 3D modeling, circuit boards and robotics programming

PROJECTS

Walking Wasp Animation Jan 2022 - Mar 2022

- Rendered a walking wasp scene with C++/OPENGL
- Calculated forward kinematics to generate world space matrices
- Generated skinning decomposition with rigid bones
- Developed an interactive GUI to adjust joint values using ImGui

Opera - Dynamic Network Aug 2020 - Jun 2021

- Assembled a low level network simulator using C++ ns-3
- Utilized socket programming to create multiple network topologies to simulate against Opera, a cost effective dynamic network topology
- Measured bandwidth, latency, throughput, and flow completion time ensuring Opera to be more cost effective

A Unicorn's Diary Mar 2021 - Jun 2021

- Developed a bulletin journal web app in JavaScript allowing users to track their mood, daily tasks, and more
- Group of 6 worked together using Agile Methodology
- Manipulated the DOM with custom components and event listeners