

336 Heron Way,  
Vacaville CA 95688

# AMAAN SINGH

(510) 660-1764  
[Amaansingh215@gmail.com](mailto:Amaansingh215@gmail.com)  
<https://www.linkedin.com/in/amaan-singh-b5a917260/>

## EMPLOYMENT

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No Experience

## EDUCATION

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**San Diego, CA** **University of California, San Diego** **Fall 2020 – June 2024**

- B.S.E. in Computer Engineering, June 2024
- Undergraduate Coursework: (Linear Algebra: Math 18, Data Structures And Algorithms, Data Structures, Computer Science and Object-Oriented Programming: Java CSE 11, Multivariable Calculus: Math 20D, Discrete Mathematics: CSE 20, Computer Architecture, Advanced Algorithms, Computer Vision: CSE 152A, Introduction to Autonomous Vehicles: ECE 148, Introduction To Analog Design: ECE 35, Circuits And Systems: ECE 45, Software Engineering: CSE 110, Design And Analysis Of Algorithms: CSE 101, Components And Design Techniques For Digital Systems: CSE 140, Advanced Digital Design Project: ECE 111, Web Client Languages: CSE 134B, Principles Of Computer Operating Systems: CSE 120)

## TECHNICAL EXPERIENCE

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### Projects

- [SPIS Summer Program Project](#) – Soundcloud to Spotify converter (2021). A script that involves my knowledge of Python, web scraping (Selenium), APIs, and HTTP requests. A script that takes your Soundcloud playlist and converts it into a Spotify playlist. Selenium · Web Scraping · API · HTTP REQUESTS · Python (Programming Language)
- [The JSONS – My Booklist](#) (2022). My team and I created a web application called MyBookList. We seek to create a powerful, efficient, and utility-based book review and progress aggregator and tracker that will help book lovers and aficionados chart, guide, and track the activity they love and enjoy so much. Using the basic languages of the web, HTML, CSS, and JavaScript, as well as collaboration and agility; we will build a local-first CRUD progressive web application.
- [TEAM 4: SMART ELEPHANT - Autonomous Vacuum Cleaner](#) (2023). Helped develop an autonomous vehicle using ROS, Python, and hardware components. Skills learned include project management, adhering to a budget and business planning, working within time constraints, designing to specifications, demonstrating performance, and delivering a well-documented project that others can build on. Introduced and did development in the following areas: Computer Vision Algorithms for Navigation, On-vehicle vs. off-vehicle computation, Computer learning systems such as Neural Networks, Locomotion Systems, Vehicle Steering and Traction Control, Dead Reckoning, Odometry, Sensor Fusion, Global Positioning Based (GPS) AutoPilot limitations, Simulation, Power Management.
- [Bitcoin Hashing / SHA-256 Implementation](#) (2023). SHA-256 - Implemented SHA-256. SHA-256 is a encryption algorithm that takes up to  $2^{64}$  bit of “message” and generates a 256-bit output. Breaks the “message” into block size of 512 bit (16 words). The last block will contain the length of the message in the last 64 bits. Each message will generate an almost guaranteed unique hash code output. Bitcoin - Implemented Bitcoin hashing using the previously built SHA-256. A simplified version of bitcoin blockchain hashing with 16 nonce (unique seeds). **System Verilog**

### Skills

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**Languages:** Python, C, C++, Java, HTML5/CSS, JavaScript, R, SystemVerilog, Assembly

**Frameworks:** Django, Flask, React, OpenCV, ROS2, and other multiple front-end frameworks

**Tools:** Unix, Git, Selenium, APIs, Requests, API development in Node.js, Docker, Excel, Powerpoint, Google Suite, Python package development, ModelSim, Quartus, Slack,

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**Strengths:** Strong Understanding of Timing/Physical Design, RTL design (Verilog), verification and logic synthesis, Data Structures, Computer Vision, Machine Learning, Advanced Algorithms, working collaboratively on multi-person coding projects, ability to learn on my own, frontend technologies, HTTP requests, Embedded systems, Ability to read schematics and use standard debugging equipment, Linux user space and kernel development, Testing, Debugging, Product Design, Test Development, thinking about user experience, intrigued in Embedded Systems, CI/CD, intrigued in robotics, json, ajax, REST, troubleshooting, communication skills