

# Nataniel Jayaseelan

Santa Cruz, CA | njayasee@ucsc.edu | +1 (626) 360 8227 | [www.nj-web.com](http://www.nj-web.com) | [linkedin.com/in/nataniel-jayaseelan](https://linkedin.com/in/nataniel-jayaseelan)  
[github.com/natanielj](https://github.com/natanielj)

## Education

**University of California, Santa Cruz (UCSC)**, BS in Computer Engineering, Computer Systems  
with Computer Science Minor – College Scholars Program Expected May 2027

- **Coursework:** Computer Architecture, Data Structures and Algorithms, Discrete Math, Logic Design, Intermediate Programming Methodologies in C++, Data Abstractions in Python, Intro to Computer Networks, Network Programming, Internet of Things, Intro to Machine Learning, Machine Learning Basics: Data Analysis and Empirical Methods

## Experience and Leadership

**Student Web Technician**, UCSC – Santa Cruz, CA Apr 2024 – Present

- Handled the maintenance and updates of the website for Baskin Informational Technology Services, guaranteeing smooth operation and a positive user experience.
- To optimize workflow and assist with tasks, I built tools using Python, such as a dead link checker, to parse the website for dead links

**Baskin Engineering Student Ambassador Lead**, UCSC – Santa Cruz, CA Jun 2024 – Present

- Coordinated Baskin Engineering Student Ambassador programs, led event planning, planned tours, managed social media promotion, and facilitated meetings to enhance student engagement.
- Organized and executed workshops, orientations and social media contests, ensuring professional service-oriented representation of Baskin Engineering while fostering an inclusive and welcoming environment for visitors.

**Student Web Developer**, UCSC Admissions – Santa Cruz, CA Jan 2024 – Oct 2024

- Managed website maintenance, updates, and for UCSC Office of Admissions, ensuring optimal functionality and user experience

**Lead Software Engineering Intern**, Virtual Medical Missions – Eastvale, CA Mar 2022 – May 2023

- Led a multidisciplinary team of students in computer science, cybersecurity, medicine, and engineering to address the lack of healthcare resources in third world countries.
- Developed remote telemedical software using full-stack technologies to create ethical and viable solutions.

**Web Developer**, Nonprofits – California Dec 2021 – Aug 2023

- Designed and developed user-friendly and visually appealing websites for the Rotary Club of Greater Eastvale, Apache News, and many more, enhancing their online presence and engagement.
- Created an award-winning website recognized for its innovative design and functionality, showcasing advanced web development skills.

## Research

**Lab Intern/Auditor**, UCSC Artificial Intelligence Explainability Accountability (AIEA) – Santa Cruz, CA Sep 2024 - Present

- Conducted advanced research on reinforcement learning algorithms, optimizing decision-making processes for autonomous vehicle systems.
- Designed and implemented novel reinforcement learning models that improve efficiency and adaptability in simulated autonomous driving environments.

**Drone Pilot Training Program**, UCSC CITRIS Initiative for Drone Education and Research (CIDER) – Santa Cruz, CA Jan 2024 - May 2024

- Gained proficiency in essential aviation topics such as reading aeronautical charts, understanding airspace regulations, interpreting weather data, preparing for a safe and successful flight.
- Collaborated on cutting-edge drone research and development projects as part of the UCSC CITRIS Initiative for Drone Education and Research (CIDER).
- Developed a GIS mapping mission project that accurately modeled a building for architectural applications and presented the model to industry professionals, demonstrating technical expertise and effective communication skills.

## Projects

---

### Reinforcement Learning Algorithm Research/Refinement

[github.com/RL-sim](https://github.com/RL-sim)

- Conduct advanced research on deep Q-Network reinforcement learning algorithms using the CARLA simulator, focusing on enhancing autonomous vehicle decision-making and performance.
- Tools used: Python, C++ , Stable Baselines, Linux

### Tech4Good OpenAI Prompt Engineerinng

[github.com/promptEng](https://github.com/promptEng)

- Developed Python programs to refine prompt engineering techniques using the OpenAI API, optimizing natural language processing capabilities for improved AI performance.
- Tools used: Python, OpenAI API, GenAI

### SlugView

[github.com/SlugView](https://github.com/SlugView)

- Developed a Web App using Three.js for the NASA SpaceApps Hackathon Orrery Web App Challenge, showcasing advanced 3D visualization skills.
- Created an interactive solar system simulation to educate and engage the public on space exploration concepts.
- Tools used: JavaScript, NASA Dataset, Three.js

## Skills

---

**Languages:** (Unity Certified), C++ , Python, PHP, HTML, CSS, JavaScript/Typescript – React/Angular, SQL, Java, Flutter/Dart

**Technologies:** Microsoft Office, Adobe, Figma, Unity, Digital Literacy, Firebase, GitHub, Node.js, PyTorch, JetBrains

**Awards:** 1st Place in CA Future Business Leaders of America, 2nd Place in Computer Applications in CA Inland Section Future Business Leaders of America, Honor Roll 2019-2023

**Clubs:** Slug Gaming Community - Production Manager, Google Developer Club - Google Developer Solution Challenge, SlugPath, SlugWorks