

# Akshera Paladhi

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## EDUCATION

**University of California Santa Cruz**, Santa Cruz, CA

*Bachelor of Science in Electrical Engineering B.S., Minor in Astrophysics*

September 2024 – Present

Expected Graduation June 2028

GPA: 3.73/4.0

- **Relevant Coursework:** Computer Systems and Assembly Language, Modern Electronics, Introduction to Physics I, Computer Systems and C Programming, Linear Algebra, Vector Calculus, Python Programming, Introduction to Probability Theory, Physics III Introduction to Electricity and Magnetism, Introduction to Scientific Computing

## EXPERIENCE

**Learning Support Services Tutor** (Hybrid)

Sept 2025 – Present

*Large Group Tutor/Individual Tutor*

- Leading weekly tutoring sessions for 5+ students in CSE 12 (Computer Systems & Assembly Language), reinforcing low-level logic, data structures, and system design to improve retention and applied understanding
- Providing one-on-one tutoring in Linear Algebra to strengthen conceptual reasoning in vector spaces, eigenvalues, and matrix computation for the student

**UC Santa Cruz Quantum Computing** (Hybrid)

August 2025 – Present

*Vice President/Researcher*

- Organizing weekly technical workshops and events for 20+ student members, introducing practical applications of quantum algorithms
- Collaborating with leadership to plan funding initiatives, expand research opportunities and oversee and ongoing machine learning research project comparing quantum neural networks (QNNs) vs. Deep Neural Networks (DNNs)

**UC Santa Cruz Institute of Particle Physics (SCIPP)** (Hybrid)

June 2025 – Present

*Undergraduate Researcher*

- Developing embedded C/C++ firmware for STM32 with UART/I<sup>2</sup>C for real-time data acquisition
- Debugging hardware and software systems using oscilloscopes, logic analyzers, and multimeters
- Automating calibration and logging in Python, increasing hardware testing throughout
- Contributing to a Git-managed codebase, following professional collaboration practices

**L'Space Nasa's Proposal Writing and Evaluation Experience** (Remote)

May 2025 – August 2025

*Research Participant (Workforce Preparation)*

- Served as Scientist on a student team in NASA's Workforce Preparation Academy, developing science goals and traceability matrices, conducting trade studies, and creating CAD designs in Siemens NX
- Reviewed NASA solicitation proposals, evaluating submissions against rubric criteria and providing structured feedback to proposal teams

**SSCS Arduino Contest - IEEE Project**, (Hybrid)

April 2025 – August 2025

*Research Project*

- Developed a wearable audio-to-haptic device using FFT and motor control to improve accessibility
- Implemented real-time C signal processing with analog filtering and UART/I<sup>2</sup>C for reliable performance
- Led hardware and software integration and testing to validate system accuracy
- Designed motor driver and audio circuits, applying power and small-signal analysis collaboratively

**BattleBoats Project**, (Hybrid)

May 2025 – June 2025

*C Programming Project*

- Designed a Battleship-style multiplayer game on a 32-bit Microchip PIC32, implementing game logic in C to implement logic and I/O control
- Debugged timing and memory issues, ensuring reliable performance and game synchronization

## SKILLS

- **Programming & Software:** C, C++, Python, MATLAB, HTML/CSS/JavaScript, Jupyter Notebooks, Git/GitHub, Linux
- **Hardware & Engineering Tools:** STM32 microcontrollers, UART/I<sup>2</sup>C/SPI, KiCad, LTspice, PCB Design, Thorlabs CC215MU camera (ThorImageCAM/ThorCam), Machine Learning, Signal Processing, Mathematical Optimization, Data Structures & Algorithms, Probability, Circuit Analysis, & Orbital Mechanics