Rucha Damle

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EDUCATION

California Polytechnic State University   **San Luis Obispo**
Bachelor of Science in Computer Science   **Expected: May 2027**
- **GPA:** 3.96
- **Relevant Coursework:** Design & Analysis of Algorithms, Data Structures, Project-Based Object Oriented Programming and Design, Intro to Database Systems, Intro to Computer Organization

EXPERIENCE

Santa Clara University Robotics System Lab   **Santa Clara, CA**
Computer Science Robotics Research Intern   **July 2025 – Aug. 2025**
- Configured and maintained Linux/Unix-based environments for robotics development and sensor data processing
- Automated deployment and testing scripts using Bash and Python, enhancing system reproducibility and uptime
- Integrated new hardware and optimized software pipelines, restoring full mobility and hardware-software communication
- Conducted unit and integration testing to ensure functionality and maintainability across robotic systems

Eye BeamIt   **SF Bay Area, CA**
Software Development Engineering Intern   **June 2024 – Oct. 2024**
- Optimized complex SQL queries and database systems, boosting performance by 40% and improving data integrity
- Developed scripts and automated workflows to streamline internal testing and data-handling processes
- Supported iOS app development and evaluated transition to React Native for cross-platform compatibility
- Collaborated in a small agile team, independently designing and debugging features with limited oversight
- Delivered technical demos to 120+ attendees, explaining complex ideas clearly to diverse audiences

Ohlone College   **Fremont, CA**
Computer Science Tutor   **Aug. 2024 – June 2025**
- Tutored students in C++, Java, and Python, on data structures & algorithms and object oriented programming
- Guided students in debugging and code optimization using test-driven development

Science Small Groups   **Stanford, CA**
Research Intern   **Sep. 2023 – Dec. 2023**
- Researched applications of IoT for assistive technologies alongside a Stanford postdoctoral researcher
- Conducted a literature review presented findings to an audience of 50+ peers and postdoctoral researchers

PROJECTS

Network Packet Router Simulator | Python, React, Flask, Vercel, Render
- Developed a network router simulator with Dijkstra-based routing and real-time packet path visualization across dynamic topologies
- Built a Flask backend and React frontend with interactive ForceGraph graphs and hop-by-hop packet animation
- Deployed on Vercel and Render for live demos and tested packet delivery across multiple topologies

Huffman Compression Algorithm | C++
- Developed a lossless file compression tool applying greedy algorithms, binary tree structures, and algorithmic design principles to reduce text file size by up to 60%
- Implemented a custom bit-level I/O system with efficient encoding and decoding, improving runtime performance and resource utilization
- Conducted rigorous testing, debugging, and validation to ensure accurate and maintainable software performance

SKILLS

- **Programming:** C++, Python, Java, SQL, JavaScript, C
- **Technical Skills:** React, Git, ROS2, Docker, Linux, Database Systems, Software Design, Debugging, Networking Fundamentals (IP routing, Ethernet switching), Version Control, Unit & Integration Testing, Agile Development
- **Languages:** English (Fluent), Marathi (Fluent), Spanish (Beginner)