

ARYA JAIN

Software Engineering Intern | Computer Engineering

San Diego, CA | U.S. Citizen | 858-500-2664 | aryaarjun1002@gmail.com | github.com/aryaj1002 | linkedin.com/in/aryaajain

Computer Engineering student with a 4.0 GPA and hands-on experience building software across robotics, computer vision, pathfinding, systems programming, and embedded platforms. Strong foundation in Java, Python, C, data structures, algorithms, object-oriented design, and test-driven engineering.

TECHNICAL SKILLS

Languages: Java, Python, C, ASM, System Verilog

Software: Data Structures, Algorithms, Object-Oriented Design, A* Search, Strategy Pattern, Unix/Linux, Git

AI / Vision: OpenCV, TensorFlow Lite, CNNs, YOLO, Gemini, GenAI, image processing, 6DoF pose estimation

Tools & Platforms: GitHub, Jupyter, AWS, Fusion360, LTspice, STM32, Arduino

EDUCATION & AWARDS

California Polytechnic State University, San Luis Obispo | B.S. Computer Engineering, GPA: 4.0/4.0 | Expected Dec 2027

Relevant Coursework: Data Structures & Algorithms, Object-Oriented Design, Systems Programming, Computer Architecture, Digital Design & Embedded Systems, Linear Algebra

Awards: Cal Poly Dean's List Scholarship, Cal Poly Merit Scholar, National Merit Commended Scholar, AP Scholar with Distinction, multiple 1st-place engineering/innovation awards, SAT Math 800/800

EXPERIENCE

Cal Poly Racing - Formula SAE | *Embedded Software Engineer*

Sept 2025 - Present

- Designed a custom STM32-compatible PCB, defining power, sensor, actuator, and communication interfaces for a Formula SAE vehicle system.
- Created schematics, board layouts, pin assignments, and component selections while collaborating through Git Bash/version control.
- Applied embedded software and hardware design fundamentals to support iterative development across electrical and software subsystems.

FIRST Tech Challenge Robotics | *Team Captain*

Aug 2022 - Mar 2025

- Led autonomous robotics software development across localization, perception, and motion planning in Java.
- Architected modular codebases and mentored students in algorithms, debugging, software design, and system integration.
- Owned cross-functional integration across mechanical, electrical, and software subsystems for autonomous competition robots.

SDUSD | *Lead Intern*

Summers 2024 & 2025

- Developed and taught Python and Java-based programming curriculum to 400+ students internationally.
- Delivered project-based computer science and engineering instruction while supporting hands-on STEM curriculum development.

SELECTED SOFTWARE PROJECTS

Java Virtual World Simulation | *A* Pathfinding, OOD, Strategy Pattern*

- Built a Java object-oriented simulation with autonomous entities using A* pathfinding to navigate obstacle-filled environments.
- Refactored movement logic using the Strategy Design Pattern, enabling interchangeable pathfinding algorithms through a common interface.
- Implemented open/closed sets, G/F score tracking, Manhattan-distance heuristics, path reconstruction, Java streams, lambdas, and automated unit tests.

Computer Vision & Deep Learning Systems | *OpenCV, TensorFlow Lite*

- Built real-time OpenCV color classification using bounding boxes and RGB distance metrics.
- Designed and trained a custom CNN in TensorFlow and deployed optimized inference via TensorFlow Lite.

Autonomous Localization & Motion Planning | *Sensor Fusion, Algorithms*

- Implemented Bezier-curve trajectory planning with continuous replanning via Newton's Method and vector-based inverse kinematics.

Simplified File System Emulator | *C, Unix/Linux, CLI*

- Developed a C-based file system emulator with directory navigation, file creation, directory management, and a custom command-line interface.
- Implemented inode-based metadata storage, binary file structures, validation, persistence, and low-level file I/O across executions.