Jaspreet Ahluwalia

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EDUCATION

San José State University — San Jose, CA
B.S. Electrical Engineering — *Expected May 2029*
- **Relevant coursework:** EE 30 Microcontrollers (C), Linear Algebra & Diff. Equations, AP CS A (5), AP Statistics (5)

Diablo Valley College — San Ramon, CA
CollegeConnect Dual Enrollment Program — *Completed Jun 2026*
- Completed 8 transferable college courses alongside high school; GPA: 3.90; student commencement speaker

Honors: AIME Qualifier (2022), National Merit Commended Scholar, AP Scholar with Distinction

TECHNICAL SKILLS

Languages: Python, C, Java
Hardware & Embedded: STM32 HAL (ARM Cortex-M), Roku LT OS (RTOS), SPI, BMS telemetry, MoTeC i2 Pro
ML & Data: LLM-as-judge, prompt engineering, NLP, scikit-learn, pandas, NumPy, inter-rater reliability
Tools: FastAPI, REST APIs, Streamlit, OpenAI and Anthropic APIs, MCP, pytest, Git

EXPERIENCE

Spartan Racing | SJSU Formula SAE Electric team — Sep 2026 – Present
Electronics & Software Team Member (BMS, VCU, Derating)
- Co-developing an interrupt-driven **SPI driver in C (STM32 HAL)** for the team's custom VCU on **Roku LT OS** (RTOS): wrote bus lookup, capability reporting, shared bus state, and registration; own the thread-side transfers (locking, timeouts)
- Built a two-node battery thermal model for power derating that cut peak-temperature prediction error **72%** (3.76 °C → 1.05 °C) on unseen runs
- Traced misleading pack temperature readings to a sensor issue and wrote the derating test plan; presented both at the team's **Critical Design Review**
- Built post-run telemetry checks (**under 1 s per log**) that catch logging and sensor faults; merged into the team's pipeline

BiasLens | Detects bias in how LLMs describe Sikhs; backed by United Sikhs, a UN-partnered NGO — Jan 2024 – Nov 2026
Founder & Sole Developer — *github.com/JaspreetSinghA/biaslense*
- Shipped a **Python SDK on PyPI**, a rate-limited FastAPI REST API, a Streamlit web app, and an MCP server
- Rebuilt the scorer as a structured **LLM-as-judge** that rates text 1–5 on 5 dimensions with a written rationale; validated it on a hand-labeled benchmark with a held-out test split
- Calibrated the original rule-based scorer on **276 human ratings** of responses from 3 LLMs (6 raters) with Krippendorff's alpha; presented at the United Sikhs Summit 2025

Rayfield Systems | VC-backed energy-efficiency startup — Jun 2025 – Jul 2025
AI & Automation Intern, Harvard Undergraduate Ventures-TECH Summer Program — *Remote*
- Cut manual reporting time **35%** and raised data accuracy **25%** by automating compliance reporting with a Python tool
- Trained 8 teammates to run the new reporting process

LEADERSHIP

Blind Dev, California High School — 2023 – 2026
Vice President
- Co-led 3 accessibility hackathons with ~90 participants a year; mentored 12 teams building foundations for computer vision tools such as AI-powered glasses, OCR readers, and navigation aids

Boy Scouts of America — 2022 – 2025
Eagle Scout; Senior Patrol Leader
- Led a 120-scout troop as Senior Patrol Leader: 30+ outings, 10+ service projects, and three 8-day, 50-mile backpacking expeditions (Yosemite, Grand Canyon) for crews of 12
- Directed an Eagle Scout literacy drive that delivered ~1,400 books and ~1,300 school supplies (>$15,000) to Jaswant Singh Khalra Elementary

Interests: Competitive bhangra (Bhangra Empire All-Stars, Warriors halftime show), cross country (18:25 5K), swimming