Aditya Singh

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EDUCATION

University of California, Santa Barbara — Goleta, CA
Bachelor of Science in Computer Science — Graduating Jun 2027
- GPA: 3.97/4.00 • Relevant Coursework: Problem Solving with C++, Object-Oriented Programming with C++, Linear Algebra, Differential Equations, Multivariable Calculus, Data Structures and Algorithms, Computer Architecture

TECHNICAL SKILLS

Programming Languages: TypeScript, JavaScript, HTML, CSS, Python, Java (Spring Boot), C++, Go, Rust
Frameworks & Testing: React, Next.js, Redux Toolkit (RTK), FastAPI, Node.js, Playwright, Jest, pgvector
DevOps & Cloud: AWS (Bedrock, Lambda), Azure DevOps (CI/CD), Docker, Kubernetes, Prometheus, Linux
Databases & Tools: PostgreSQL, Supabase, RESTful APIs, Git, Cursor, OpenCode, Codex

EXPERIENCE

Software Engineering Lead — Aug 2025 – Present
Ryft AI — Cupertino, CA
- Led a team of 3 to ship a commission management SaaS in **Next.js 14**, **TypeScript**, and **FastAPI**, supporting enterprise deployments and contributing to **30k** ARR including **Corgi** from **YC Summer 2024** valued at **630M**. Implemented **Redux Toolkit** and **RTK Query** so dashboard filters persist across navigation and key data loads use cached, deduplicated reads
- Built a compensation plan PDF extraction pipeline using PyMuPDF, Tesseract OCR, and **GPT 4o** structured outputs. Achieved **95%** extraction accuracy and compiled rules into DSL using Python `Decimal` arithmetic for audit ready calculations
- Implemented **OAuth 2.0** integrations for Salesforce PKCE and HubSpot to sync deals, contacts, and hierarchies into **PostgreSQL** with row level security. Added Sentry that eliminated **350 to 400** hours of QA per quarter

Co-Founder and Team Captain — Sep 2018 – Jan 2024
Techno G.O.A.Ts LLC — Fremont, CA
- Co-founded a 501(c)(3) robotics nonprofit—3D-modeled 30+ competition robots in Fusion 360, trained machine learning and ran weekly build sprints synthesizing build team progress for efficient hardware-code integration
- Engineered a custom computer vision pipeline using TensorFlow and OpenCV to train a Convolutional Neural Network (CNN), reducing autonomous task latency by 40%+ during competitive matches with 96% object detection accuracy
- Mentored neurodivergent learners via a 4 year Serendipity STEM partnership, and secured a 5k apple grant

PROJECTS

Ziri — Feb 2026 – Present
Python, FastAPI, LangGraph, AWS Bedrock, PostgreSQL, pgvector, Langfuse
- Built a real time voice dashboard as a single **1138** line HTML client using **vanilla JavaScript**, **CSS**, **Canvas**, and the **Web Audio API**. Shipped now playing UI, playback controls, transcripts, and vision preview by polling **23 FastAPI** REST endpoints at **250 ms** active
- Implemented deterministic routing for **258** common voice commands that executes quick actions with **zero LLM calls** and **zero TTS calls** using **32** pre cached audio replies. Optimized the audio pipeline to reach **sub 50 ms** audio latency for cached responses and **sub 900 ms** TTFB for multi step queries
- Improved reliability with an **eight layer** fallback system and structured **ToolResult** errors so failures never crash the orchestrator. Added **85 pytest** tests across **9** files plus a **25** JSONL eval harness, and exposed a **/status** endpoint plus **Prometheus** latency metrics

Autonomous Soft Robot System for Safer Brain Tumor Therapy — Nov 2022 – Jun 2023
MATLAB (Neural Network Toolbox), C++, Supervised Machine Learning
- Trained a **Bayesian Neural Network** on 100k joint configs via Matlab's **Neural Net Toolbox** to predict a flexible surgical robot's 3D tip position from joint inputs: Achieved **sub 0.1%** max tip error on unseen targets
- Developed a MATLAB algorithm to convert multi-million-voxel **MRI data** into interactive **3D brain safety maps** enabling high fidelity **collision-aware planning** with tumor highlighting
- Engineered a **C++** control stack for a 6-DOF robot arm through an Arduino, streaming PC to Arduino communication and synchronizing multi-actuator motion
- Won **1st place** among **230+** participants at regional science and engineering fair (ACSEF)

PUBLICATIONS

Kinematic Controller of a Soft Continuum Robot Using Learned Forward Models — Feb 2023
University of Cambridge (Research Program) — Cambridge, UK
- Formalized a **learned forward-kinematics** algorithm for soft continuum robots over 6 months of research, addressing redundancy and non-invertibility
- Presented at the IEEE **MIT Undergraduate Research Technology Conference**