

Khush Lalchandani

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Education

Stanford University

June 2029

B.S. in Computer Science

Stanford, CA

Honors: Presidential Gold Volunteer Service Award, National Merit Scholar, Eagle Scout, Global Seal of Biliateracy

Experience

Cirrus Logic

Jun 2025 – Aug 2025

Software Engineer Intern

Austin, TX

- Designed and implemented a **Go**-based telemetry GUI for the Atom IC Handler integrating hardware sensor with engineering controls, error logs, custom gamepad and laser alignment features to cut manual setup time by over **80%**.
- Delivered production-ready recipe creation and run controls with input validation, version history, and error safeguards.
- Set up secure user authentication and device updates using the handler **REST API** and **SSH**, automatically pulling builds from **Bitbucket** and deploying updates through a **Raspberry Pi controller** with **PowerShell scripts**.
- Worked with test engineers to add error detection and guided debugging workflows, reducing average debug time by 50%.

Mobility Systems Laboratory (UT Austin)

Jun 2024 – Aug 2024

Research Assistant — Autonomous Vehicles

Austin, TX

- Implemented a **bird's-eye-view** projection and a **pure-pursuit controller** on a Quanser QCar for an embedded autonomous vehicle platform in MATLAB/Simulink.
- Built an **Advanced Driver Assistance System** lane-segmentation pipeline using **computer vision** on the vehicle's four directional cameras, integrated with real-time control loops and hardware I/O reducing tracking error by **20%**.
- First author** on research paper and selected to present work at the **National Science Foundation Headquarters**.

ZSuite Technologies

Jun 2023 – Aug 2023

Software Engineer Intern

Austin, TX

- Built a **LLM** question-answering tool with **LangChain** and **Azure OpenAI** that searches a **Weaviate** index of company policy documents and returns clear answers to client questions using **retrieval-augmented generation**.
- Deployed secure, versioned **APIs** and **UI integration** for banking workflows, enabling document uploads and automated responses that cut manual reply time and improved consistency and auditability.

Jaisr Consulting

Jan 2023 – Present

Co-Founder & CEO

Austin, TX

- Co-founded a consulting practice providing **technical solutions** and support for **small businesses**.
- Delivered full stack and automation solutions for small businesses, managing projects end-to-end generating **\$20K** revenue.

Kumon

Oct 2020 – June 2024

Math and English Tutor, Data Entry Specialist

Austin, TX

- Tutored K–8 students in **mathematics** and **English** and provided personalized academic support on assignments.
- Assessed and recorded student **performance data** to track progress and assist instructors in **tailoring learning plans**.

Projects

Image Editor | *Next.js 14, TypeScript, Tailwind, Cloudinary, Clerk, MongoDB, Stripe*

March 2024 - February 2025

- Built and deployed a production-ready web image editor in **Next.js 14 (TypeScript)** with **Cloudinary** transformations for fast object recolor, background/object removal, social-crop presets, image enhancing, and one-click watermarking.
- Implemented user **authentication** with **Clerk**, stored user profiles and login state in **MongoDB**.
- Integrated **Stripe** for credits and payments using secure webhooks to update balances and protect against tampering.

Route Safety Assistant | *Python, scikit-learn, DBSCAN, Random Forest, TTS, Flask*

Jan 2025 - April 2025

- Engineered a scalable pipeline computing a **Route Safety Score** from 20 years of crash data, clustering hotspots with **DBSCAN** and ranking the three safest routes via a **Random Forest** model.
- Provides **text-to-speech** guidance and an **AI assistant** to modify routes and explain safety tradeoffs.

Complex Number Library | *C++, Catch2, CMake*

September 2023 - November 2023

- Created a complex number library in C++ with arithmetic, conjugate, magnitude/phase, and coordinate conversion.
- Validated behavior with comprehensive **Catch2** tests using tolerant equality for floating point edge cases.

Technical Skills

Languages: C/C++, Python, Go, Java, TypeScript/JavaScript, MATLAB

Systems & Tools: Linux, Windows, Git, Docker, REST APIs, SSH, PowerShell, Azure, AWS, MongoDB, MySQL

Frameworks: Flask, Next.js, React, Django, scikit-learn, PyTorch, TensorFlow

Concepts: Debugging & Testing, CI/CD, Security (OAuth/SSL/TLS), Computer Vision, Embedded Systems