

# Angad Singh Arora

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## EDUCATION

### University of Washington, Seattle

B.S. in Computer Science, Minor in Entrepreneurship

Graduation: June 2029

**Relevant Coursework:** Data Structures & Algorithms, Computer Programming II, Software Design & Implementation, Linear Algebra, Multivariable Calculus, Statistics & Probability, Entrepreneurship & Innovation

## HACKATHON PROJECTS

### CueBOT (UW Hackathon)

October 2025

- Engineered an end-to-end computer vision pipeline for Twitch streamers enabling automated camera framing, gesture-based scene switching, and real-time highlight clipping across 12+ concurrent sessions.
- Integrated OpenCV, MediaPipe, and OBS WebSocket APIs for sub-100 ms event detection, expression mapping, and dynamic content rendering within live streams.
- Implemented NLP-driven chat analytics using Transformer embeddings to detect sentiment spikes, keyword frequency, and engagement velocity, surfacing key moments with 92% precision during post-stream analysis.

### GrandFLOW (UC Berkeley Hackathon)

November 2025

- Built a multi-agent automation platform for senior care that processed 85,000+ data points from wearable devices, diet logs, and medication reports.
- Developed backend pipelines in FastAPI and Supabase to synchronize health metrics and voice inputs in real time, maintaining stable throughput of 8–10 requests per second.
- Integrated LLM-based reasoning agents trained on 3,000+ patient-state examples to detect anomalies and generate personalized care recommendations for caregivers and families.
- Presented product and technical architecture to YC-affiliated venture capitalists and startup mentors, receiving feedback on scalability, compliance, and go-to-market strategy.

## PROFESSIONAL EXPERIENCE

### Gurbanity: Web Application

Seattle, WA

Founder and Lead Developer

January 2022 - June 2025

- Designed and launched an AI-powered web platform reconnecting first-generation Punjabi children with language, music, and heritage through adaptive learning.
- Scaled to 1,200+ active users by developing personalized modules that analyzed engagement data to tailor vocabulary, scripture, and pronunciation lessons using Next.js, Supabase, and OpenAI APIs.
- Built an interactive transliteration engine and analytics dashboard that boosted translation accuracy by 68% and optimized content recommendations across sessions.

### Safely Campaign (Congressional App Foundation)

Renton, WA

Software Developer

March 2024 - July 2024

- Led a team of four engineers to develop a geofencing-based mobile app that used Apple AirTags and GPS telemetry to monitor campaign sign placement within a 50-foot radius.
- Integrated traffic-flow analytics and a visibility optimization algorithm to identify high-exposure zones, increasing average sign impressions by 67% across major intersections.
- Deployed a live prototype that detected two instances of sign theft and presented findings to Washington State Senator Manka Dhingra, demonstrating data-driven approaches to campaign infrastructure management.

### Computational Energy Systems Lab

Durham, NC

Lead Researcher and Materials Data Analyst

February 2024 – September 2024

- Modeled theoretical aluminum-ion batteries using Density Functional Theory and Molecular Dynamics to analyze ion diffusion and electrochemical stability.
- Developed a computational model that outperformed lithium-ion benchmarks, achieving higher predicted voltage and energy density through optimized cathode configurations.
- Automated large-scale simulation workflows in Python and VASP, reducing computation time by 40% and enabling data-driven screening of sustainable battery materials.

## SKILLS & INTERESTS

**Languages:** Python, Java, JavaScript, SQL, C++, HTML/CSS

**Tools & Frameworks:** React, Next.js, Firebase, Supabase, Flask, FastAPI, Git/GitHub, VASP, MATLAB

**Technical Focus:** AI/ML integration, Computational Modeling, Computer Vision, Full-Stack Development, Data Analytics

**Interests:** Basketball, Cooking, Improv Comedy, Investing, Exploring Seattle's food scene