

# Khush Manchanda

✉ khush.manchanda@asu.edu   [in](#) LinkedIn   [G](#)itHub   [P](#)ortfolio

## Education

### Arizona State University

Master of Science in Computer Science | GPA 4.0

Bachelor of Science in Computer Science | GPA 3.98 | Dean's List (All Semesters)

Tempe, AZ

Expected May 2026

May 2025

## Experience

### Instructional Assistant – CSE 110: Principles of Programming

August 2025 – Present

Arizona State University

Tempe, AZ

- Taught lab sessions for 4 sections (300+ students) in an introductory Java programming course, helping first-year students transition into computer science.
- Designed and delivered lessons on problem-solving strategies and coding fundamentals, reinforcing classroom lectures with hands-on exercises.
- Provided individualized support during weekly office hours, debugging student code and addressing conceptual doubts, which improved average lab performance scores by 15%.

### Software Developer – Mobile Augmented Reality Application

August 2024 – May 2025

California Polytechnic State University & Arizona State University

Tempe, AZ

- Contributed to the development of a mobile augmented reality application in Unity, implementing interactive object rendering, gaze tracking, and real-time data integration.
- Collaborated with faculty and peers to design and test core features, ensuring a scalable and maintainable architecture.
- Produced a fully functional prototype that was demoed to faculty, validating feasibility and supporting research collaboration with Cal Poly.

### Software Engineer Intern

May 2023 – August 2023

Vayumegha Systems

Noida, India

- Built a full-stack application (ReactJS, Node.js, MySQL) for manufacturing plants to track production and streamline communication.
- Integrated WebSockets for real-time updates, improving cross-team coordination and reducing downtime by 15%.
- Enhanced system reliability and scalability by designing optimized database schemas and API endpoints.

## Projects

### BreatheFree | Swift (iOS + watchOS), Kotlin (Android), Firebase, OpenAI API

- Built a cross-platform mobile app (iOS, Android, and Apple Watch) that tracks daily nicotine pouch intake and provides AI-driven tapering plans to support smoking cessation.
- Architected a shared Firebase backend for authentication, real-time sync, and leaderboard data, while implementing CoreData (iOS) and Room (Android) for offline persistence.
- Designed behavioral support tools, including daily affirmations, craving distraction suggestions, and a social leaderboard, improving user accountability and engagement.

### WanderMind | Next.js, Flask, Google Maps API, MongoDB, OpenAI API

- Developed an AI-powered travel planner that generates personalized itineraries, optimized routes, and budget breakdowns tailored to user preferences.
- Integrated Google Maps API for location-based recommendations and interactive map visualizations, enhancing user experience with real-time data overlays.
- Built a recommendation engine combining LLM insights with stored user preferences, reducing planning time by ~40% in pilot testing.

### SeedIT @HackSVB | Python, JavaScript

- Collaborated in a 48-hour hackathon to build a machine learning-based startup success prediction model.
- Built an interactive JavaScript dashboard that secured the project's win and showcased effective teamwork under pressure.

## Technical Skills

**Languages:** Python, Java, JavaScript/TypeScript, C++, Swift, Kotlin, Go, SQL (MySQL/PostgreSQL), MongoDB

**Frameworks / Libraries:** React, Next.js, Node.js, Flask, FastAPI, TensorFlow, PyTorch, LangChain, WebSockets, REST APIs

**Dev Tools / Cloud / AI Assist:** Docker, Git/GitHub, CI/CD, AWS (EC2, S3), GCP, Firebase, Unity, OpenAI API, AI tools (Copilot, Cursor)

**Other Skills:** Agile/Scrum methodologies, Mobile (iOS/watchOS, Android), Prompt engineering, System Design, Unit Testing (PyTest / Jest)