Sahil Gathe

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EDUCATION

University of California San Diego,	La Jolla, CA
Bachelor of Science in Computer Science	*Sept. 2021 – June 2025*

EXPERIENCE

UC San Diego Center for Energy Research — Oct. 2024 – Apr. 2025
Student Software Engineer — *San Diego, CA*

- Shipped a cross-platform educational mobile application in 3 months amassing 100+ downloads across iOS and Android platforms, by developing 5 screens and 10 **React Native** components using **TypeScript** with zero prior framework experience.
- Rapid-prototyped an innovative gamified learning solution by building a fully functional energy allocation game within 1 weekend, by implementing turn-based gameplay mechanics in Godot engine where players manage regional energy resources while maintaining global temperature targets.

Center for Health Design — July 2024 – Dec 2024
Software Engineering Intern — *San Diego, CA*

- Delivered interactive AR medical software prototype exhibited at San Diego World Design Conference 2024, developing scalable voice command architecture and **React** UI that enabled AI-controlled AR interactions for healthcare applications.
- Engineered scalable AI-driven AR interaction system by using agile-practices to architect a generalized voice command parser supporting modular scene-agnostic **Unity** function and dynamic function registration, by developing a **Node.js WebSocket** server that enabled real-time LLM-to-Unity communication and served as the foundation for the production system.

CLUBS

Design Co — Feb. 2024 – June 2025
Web Developer & Board Member — *San Diego, CA*

- Launched 4 high-traffic event websites serving 200+ users each for major campus events including 100+ attendee design-a-thon and career fairs featuring Google, Deloitte, and Illumina recruiters, by partnering with interdisciplinary teams of designers, developers, and marketers to build full-stack applications using **React**, **TypeScript**, **SCSS**, and **Vercel** deployment.
- Led and designed 5 technical workshops with positive feedback reaching dozens of students and professionals, by teaching web development fundamentals, creative coding techniques, and game development using Godot engine.
- Engineered social media management platform for 10-person team to streamline asynchronous content collaboration and automated post scheduling, using **React** with **Vite**, **MongoDB**, **Next.js**, and **Tailwind** CSS to eliminate manual coordination bottlenecks.

PROJECTS

ML Ambient Music Generator | *PyTorch, Python, Jupyter Notebook* — March 2025

- Developed end-to-end neural music generation pipeline in 2 weeks producing listenable ambient music with recognizable genre characteristics, by training LSTM architecture on MIDI dataset with custom data preprocessing workflows and model architecture optimized for unconditional sequential music generation.

OpenGL Graphical Ray Tracing | *OpenGL, C++* — Feb 2023

- Built software ray tracer in 3 weeks achieving, by implementing core ray tracing algorithms with bounding box acceleration structures for spatial partitioning.
- Engineered flexible geometry rendering system capable of rendering 1000+ primitives including complex models, by parsing scene descriptions from text files and supporting triangles and spheres as fundamental building blocks.

TECHNICAL SKILLS

Languages: JavaScript/Typescript, Python, CSS, HTML, C#, Java, C, C++,
Frameworks: React, WordPress, OpenXR, OpenGL, React Native
Developer Technologies: Git, Docker, MongoDB, VS Code, Unity, Godot, Node.js, express.js, Next.js