

# Navid Nikoo

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## Education

**California State University, Fullerton** Fullerton, CA Bachelor of Science in Computer Science Aug. 2024  
– May 2026 **Irvine Valley College** Irvine, CA Associate's in Science Aug. 2021 – May 2024

## Projects

### **Physics Engine | C++, OpenGL, GLM**

- Built a real-time 3D rigid-body physics engine using AABB broadphase, SAT collision detection, and analytic sphere tests.
- Implemented iterative impulse solver with Baumgarte bias, split-impulse correction, friction, damping, and sleep/awake logic for stable stacking.
- Designed modular architecture (RigidBody, Shape, Solver, Manifold) with interfaces for forces, torques, quaternions, and contact manifolds.

### **Ray Tracing Engine | C++, OpenGL, Multithreading**

- Developed a ray tracing engine in C++, implementing features such as rendering multiple objects, lighting, shading, and physically based rendering.
- Parallelized rendering with pthreads, reducing frame render time by ~4×.
- Added support for reflections, refractions, and recursive ray tracing for realistic light behavior.

### **CipherCare | React, Node.js, Express, PostgreSQL, Twilio**

- Designed PostgreSQL-backed REST APIs for patients, conversations, messages, phone numbers, audit logs, sessions, and retention workflows.
- Implemented HIPAA-minded security controls including AES-256-GCM encryption for message/internal-note bodies, redacted audit logging, TOTP 2FA, rate limiting, and Twilio webhook signature validation.
- Added organization-scoped access controls and retention/right-to-erasure workflows for handling sensitive patient communication data.

### **TradeSense | React, Firebase, OpenAI, Finnhub**

- Built a sentiment-aware market intelligence platform with live stock data, technical indicators, and AI-generated sentiment analysis
- Architected server-side API proxy and caching infrastructure using Firebase Cloud Functions to handle rate limits and secure third-party integrations
- Implemented authenticated dashboards, watchlists, alerts, and time-lapse AI chat using Firestore and OpenAI APIs

## Work Experience

### **Alliance Psychiatric Group | Office Manager | Irvine, CA | May 2024 – Present**

- Manage patient intake, scheduling, and insurance processing for 100+ patients weekly.
- Coordinate authorizations, billing, and prescriptions, reducing approval turnaround time by 20%.
- Draft correspondence and maintain 1,000+ patient records to support psychiatrists.

### **Freelance Web Developer (Contract) WholeCare Health | Irvine, CA | 2026 – Present**

- Designed and developed a production website for a private psychiatry practice using Next.js, React, and Bootstrap
- Collaborated directly with the practice owner to gather requirements and iterate on UX and functionality
- Implemented responsive design, service pages, insurance information, and patient contact workflows
- Deployed and maintain the live site: [wholecarehealth.org](https://www.wholecarehealth.org)

## Technical Skills

- Languages: C++, Python, JavaScript, SQL, R, HTML/CSS
- Technologies: React, Firebase, OpenGL, Node.js, Stripe, Chakra UI, Bootstrap, Vite, Docker, Git/GitHub, Firestore, MySQL, OpenAI