

Alex Straight

📞 360-633-0999 ✉ alex.straight.dev@gmail.com 🌐 alexcodes.io

PROFILE

Engineer passionate about merging creativity with technical expertise to develop efficient, scalable applications. Proficient in **React** and **Next.js**, with experience in projects including a **multiplayer Pictionary game** utilizing **Go** for **WebSocket** communication. Also constructing a **2D game engine** in **Zig**, committed to solving challenging problems and keeping abreast of industry trends.

SKILLS

🔧 TECHNICAL SKILLS

TypeScript	<div></div>
Go	<div></div>
Zig	<div></div>
Next.js/React	<div></div>
Tailwind CSS	<div></div>
HTML	<div></div>
UX/UI	<div></div>
WebSocket	<div></div>
Problem Solving	<div></div>
Git	<div></div>

EMPLOYMENT HISTORY

📅 03/2024 – 05/2024 📍 SAN DIEGO, CALIFORNIA

Front End Engineer Intern Academic Assist

- Optimized frontend performance, increasing user engagement and accelerating site speed through improvements in design and functionality.
- Applied **SEO** strategies in **Next.js**, leading to better **search rankings** and increased user acquisition.

📅 05/2024 – 08/2024 📍 SAN DIEGO, CALIFORNIA

Front End Engineer Contract San Diego State University

- Implemented responsive design, improving web accessibility and user functionality.

PROJECTS

📅 PRESENT

2D Physics Engine

- Engineered** a **custom 2D physics engine** in **Zig** implementing the **Separating Axis Theorem (SAT)** for precise **collision detection**, **rigid body dynamics**, and **numerical stability systems** with **minimal computational overhead**

PROJECTS

- Implemented** comprehensive **debugging visualization** for physical properties including **velocity vectors**, **collision points**, and **sleep states**, enabling efficient **troubleshooting** and **simulation analysis**
- Designed** a **modular architecture** with specialized components for **stability management**, **sleep detection**, and a **clean API** that supports procedural simulation **creation** and **runtime manipulation**

Pictionary with Friends

- Interactive canvas with **real-time** free-hand drawing and shapes using **Go** for **WebSocket** communication, **Fabric.js**, and **Framer Motion** for animations.
- In Progress: Adding leaderboards to track player stats.

Discord Bot

- Built a **Discord bot in Go** with AI chat, news updates, and real-time sports data using the **SportRadar API**.
- Implemented **concurrent song queue management**, allowing seamless background music downloads and playback.
- Integrated **cron jobs** for automated tasks and scheduled updates.
- OpenAI** API integration.

EDUCATION

📅 08/2021 – 05/2025 📍 SAN DIEGO, CALIFORNIA

Computer Science | Bachelor of Science San Diego State University

- Dean's List (3x)** – Recognized for academic excellence with a **3.8 Major GPA**.
- Pathfinding Visualizer** – Developed an interactive visualization tool for **data structures and algorithms**, currently used in a course.
- Research Assistant** – Optimized **NOMA systems with IRSs** using the **BFGS algorithm** to enhance signal data rates.
- Teaching Assistant – Data Structures & Algorithms**
- Assisted students with algorithm implementation and problem-solving.
- Held office hours and graded assignments for foundational CS concepts.