Alex Straight

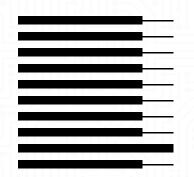
PROFILE

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

(i) TECHNICAL SKILLS

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



EMPLOYMENT HISTORY

苗 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

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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.