Liam Clegg | Computer Science Graduate

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Profile

Passionate and skilled Computer Science graduate seeking a technically challenging role that involves solving complex problems. My goal is to leverage my strong coding skills and deep interest in developing innovative solutions, contributing to projects that push the boundaries of technology.

Education

Swansea University, Swansea
September 2021 - May 2024
Computer Science BSc

Davenant Sixth Form, Loughton Essex
September 2019 - July 2021
ALevels: Computer Science (A), Maths (B), Physics (C), EPQ(B)

Freelancing Work Experience (*Summer 2023)*

Worked with a startup on an AI-based IDE, focusing on both front-end and back-end development.

- **Front-End**: Developed complex UI components using Next.js, tackling challenging problems such as state management for dynamic tab layouts.
- **Back-End**: Created a type-safe library for interacting with the GPT API and connected user APIs, ensuring seamless integration and autocomplete functionality. Designed and implemented a system for containerizing workspaces, enabling Git integration and efficient version control to manage AI-generated changes.
- **Collaboration**: Worked effectively with the team using version control (Git) and communication tools like Slack.

Projects (*These are some of the ones I enjoyed the most)*

- **Blockchain-Based Polling Web App**
  Developed a web app utilising WebRTC to create a blockchain for polling purposes. Implemented algorithms such as blockchain and Kademlia hash tables from scratch, showcasing problem-solving skills and a deep understanding of P2P networks and consensus mechanisms.
- **Black Hole Ray Tracer**
  Created a real-time ray tracer for simulating black holes using Rust and WebRTC. Self-taught general relativity and implemented optimised data structures and unique algorithms based on cutting-edge research, resulting in a

high-performance simulation. This project was part of my third-year university dissertation.

- **Terminal UI Library**
  Designed and built a UI library with state management for terminal applications. Implemented a builder pattern for UI construction, a virtual UI tree for state updates, and asynchronous event handling. Optimised rendering with bitwise operations and a character buffer to ensure efficient updates.

Technical Skills

- **Programming Languages**
  C, C++, Rust, JavaScript, TypeScript, Java, Python
- **Frameworks & Libraries**
  Next.js, React, Express JS, SolidJS, WebRTC, Prisma, Redis, WebSockets, WebGPU, Actix-web, Matplotlib, SciPy, TensorFlow, Sklearn, OpenGL
- **Tools & Platforms**
  Docker, Git, Linux, Vim and so on

Additional

- **Hobbies:** Enjoy coding random projects, drawing, and playing guitar.