Sam Fitch

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EDUCATION

St. John's Marlborough   Wiltshire, United Kingdom
A Level Computer Science, Mathematics, Physics, DSAT   *Sep. 2018 – June 2025*

Cardiff University   Cardiff, Wales
BSc Computer Science with a Year in Industry   *Sep. 2025 – June 2029*

EXPERIENCE

Freelance Software Engineer   June 2025 – December 2025
Risk Matrix.co.uk – Risk Management Platform   *Hybrid*
- Replaced a team of 20 as a single full-stack developer; took ownership of the entire codebase, frontend, backend, and deployment
- Refactored the app with TypeScript, React, Tailwind CSS, and Tauri; delivered iteratively 1:1 with the client over a 6-month engagement

PROJECTS

BioAtlas | *Next.js, FastAPI, Python, Supabase, ESM-2*   February 2026 – Present
- Building a full-stack biosecurity intelligence platform inspired by Valthos (OpenAI, Founders Fund) after being unable to join due to US citizenship requirements; fuses wastewater, genomic, and epidemiological signals into an evidence-linked intelligence graph with analyst triage workflows
- Ingests CDC NWSS wastewater and Nextstrain genomic data; runs change-point detection and anomaly scoring to generate explainable, evidence-backed alerts
- Implements sequence-level threat analysis (natural vs. engineered detection, fitness scoring) using Meta's ESM-2 protein language model as an open alternative to proprietary models

Dream.ee | *Unity, C#, Python, Meta Quest 3, BrainBit EEG*   January 2026
- 2nd place at MIT Reality Hack 2026 – Founders Lab track
- Built real-time adaptive VR worlds driven by EEG engagement signals from a brain-computer interface on Meta Quest 3
- Designed end-to-end loop: user behavior to analytics to AI world generation to seamless environment swap, all without breaking immersion

schoolbored.ai | *Next.js, TypeScript, OpenAI API, Vercel*   2024 – Present
- Solo design engineer: leading product definition, UX, visual design, and full-stack implementation of an AI study tool for university students
- Building streaming AI responses with graceful loading, error, and empty states; iterating on flows informed by student interviews

Decile | *Rust, Swift, TypeScript, Tauri, Next.js*   2025 – Present
- Architected a Rust sync engine with end-to-end encryption, delta compression, and content-aware deduplication for a decentralized P2P file manager
- Built native iOS app with File Provider integration for background sync, Next.js web UI, and Tauri desktop app; WebRTC for direct peer-to-peer connections

Archipelago | *Unity, C#, Swift, Metal*   March 2024 – September 2025
- Collaborated with Apple at Battersea pre-launch to port a VR game from SteamVR to visionOS
- Solo developer: built novel water physics interaction system, intuitive spatial player controller, and all game design and 3D art

TECHNICAL SKILLS

Languages: TypeScript, Python, Swift, C#, Rust, HTML/CSS, Java
Frameworks: Next.js, React, FastAPI, Unity, SwiftUI, RealityKit, ARKit, Tailwind CSS
Platforms: visionOS, Meta Quest, iOS, Vercel, Tauri, Supabase
Tools & APIs: Git, Xcode, VS Code/Cursor, OpenAI API, ESM-2, Mapbox, WebRTC, BrainBit EEG SDK