

# James Edward Dawson

## Full Stack Developer

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**Location:** Chelmorton, Buxton, United Kingdom

**Work Authorization:** Canada immigration documentation complete, ready to proceed upon offer

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## Professional Summary

Full-stack developer with 3.5 years of professional experience building production systems at scale. Created zero-maintenance dashboard serving sales teams daily for 2+ years with no crashes or bug reports. Advanced proficiency in TypeScript, React, and PostgreSQL. Track record of translating complex technical systems into intuitive interfaces for non-technical users. Led solo projects from conception to production and mentored developers transitioning to full-stack roles.

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## Technical Skills

**Languages:** TypeScript, JavaScript (ES6+), Python, HTML/CSS

**Frontend:** React (19, hooks, React Query), Lexical, Vite, Tailwind CSS

**Backend:** Express.js, Node.js, PostgreSQL, RESTful APIs

**Tools:** Docker, Azure, Git/GitHub, Jest, React Testing Library, Agile

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## Key Strengths

**Cross-Functional Communication** - Bridge technical complexity for non-technical users. Liaised between backend developers and sales teams to create dashboard translating complex database operations into intuitive interfaces. Users continue expressing gratitude years after delivery.

**Zero-Maintenance Systems Design** - Emphasize architectural quality and structure to prevent issues before they arise. Built production dashboard serving 15+ users daily for 2+ years with zero crashes, zero bug reports, zero maintenance required.

**Collaborative Facilitation** - Proactively connect team members across the organization to solve problems and share knowledge. Identify opportunities to help colleagues, introduce them to relevant resources or people, and remove blockers. Foster cohesive team environment where everyone has what they need to succeed.

**Mentoring & Knowledge Transfer** - Mentored 3 backend developers transitioning to full-stack roles, all now contributing confidently to frontend codebase. Created comprehensive documentation enabling future developers to onboard efficiently.

**Full-Stack Leadership** - Led solo projects from conception to production with full technical decision-making authority. Designed system architecture, selected technologies, and delivered production-ready solutions.

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## Professional Experience

### Full Stack Developer

**Nurtur** | July 2022 - Present | Derby, UK

#### Major Projects:

**Integrations Dashboard (Solo Full-Stack Project)** - Rebuilt barebones buggy backend page into intuitive full-stack dashboard used daily by 15+ sales team members - Designed and implemented both frontend (React/TypeScript) and backend

(API endpoints, PostgreSQL) - Liaised between backend developers and non-technical end users to bridge technical complexity  
- Still in production 2+ years later with zero maintenance required, zero crashes, zero bug reports—users continue to express gratitude

**Nexus Dashboard (Current Project - Scalable Architecture)** - First developer to build dashboard for complex backend system (queues, virtual machines) - Designed architecture to adapt to major backend changes without significant frontend rewrites—built for decades of stability and maintainability - Structured for scalability with expandable space for graphs, pages, and filters as system grows - Created comprehensive documentation and setup guides for future developers - Added safety layers preventing accidental data corruption or removal

**Email Editor (Core Product Rebuild - Team Collaboration)** - Rebuilt core company product: drag-and-drop email template system for client campaigns (4-person team) - Developed complex components including link editor using Lexical framework - Mentored 3 backend developers transitioning to full-stack roles, all now contributing confidently to frontend codebase

**Technical Contributions:** - Optimize performance for large-scale databases: reduced dashboard load time from 15+ seconds to sub-5 seconds through strategic loading, count displays vs full objects, buffer systems, and React Query caching - Build RESTful API endpoints for dashboard data access - Conduct regular code reviews and provide technical guidance to colleagues  
- Emphasize architectural quality and structure to prevent issues before they arise

## Earlier Experience

**Freelance Web Developer** | Self-Employed | March 2021 - June 2022

Built full-stack web applications including complete e-commerce platform from scratch using React, Stripe, and Firestore. Managed client relationships, architecture decisions, and production deployment.

**Junior Web Developer** | BriefYourMarket.com | October 2020 - February 2021

**Volunteer Game Developer** | Humanitarian Operations | March 2020 - June 2020

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## Key Projects

### WhatNow - Self-Training Activity Recommendation System

**Reinforcement Learning** | TypeScript, React, Python, Contextual Bandits

Built activity recommendation system using contextual bandits that generates its own training data through use. Two-layer learning architecture: fast session learning (rate 0.8) for immediate refinement, slow base learning (rate 0.02) for long-term preferences. System trains itself through usage, eliminating need for massive training datasets while remaining robust to outliers.

**Technologies:** TypeScript, React, Python, FastAPI, PostgreSQL, Reinforcement Learning

### Portfolio Website - Design System Architecture

**Artistic Design Meets Engineering** | React 19, TypeScript, Vite, Tailwind CSS

Built reusable diorama system combining artistic visual design with scalable technical architecture. Configuration-driven components support multiple visual themes, shapes, and animated layers while maintaining type safety. Generic component system makes complex layered visual designs reusable through configuration. Theme-based color system and clockwork animation timings create cohesive visual experience.

**Technologies:** React 19, TypeScript, Vite, Tailwind CSS, styled-components, CSS Animations

### Atlantis - Lake Bed Mapping System

**“Engineering for Impossible Places”** | Python, Embedded Systems, LoRa, 3D Printing

Building surface drone boat with towed probe for autonomous lake bed mapping on \$500 budget. System maps underwater terrain using towed sensor probe while boat remains on surface for reliable control and recovery. Arduino Nano controller

with LoRa communication, custom 3D-printed enclosures. Pivoted from fully submerged drone to surface boat + probe design—easier recovery, simpler waterproofing, better survivability.

**Technologies:** Python, Arduino, LoRa Communication, Sensor Integration, 3D Printing

### **Cirrus - Predictive Wildfire Risk Mapping**

**Ambitious Data Engineering** | Python, PostgreSQL, Machine Learning

Designed system to process 242+ million historical weather records from 9,269 stations to generate predictive wildfire risk maps. Built optimized PostgreSQL database architecture handling 50GB dataset. Used freely available NOAA historical data instead of expensive APIs—valuable learning experience in working with large-scale data systems.

**Technologies:** Python, PostgreSQL, Data Engineering, Database Optimization

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