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George Miller

Skills

- Backend Development
  - I prioritise scalable server-side logic to minimise client-side processing. Proficient in **TypeScript** with **Node.js** and **Python**, with experience using **Go** and **Java**.
  - Designed and built a **GraphQL** microservice that reduced response times by more than 67%, despite handling more traffic. This also resolved rate-limiting issues by using **Redis** for caching and request consolidation, reducing occurrences from 80,000 to 2,000 per month.
  - Expertise in designing and implementing normalised **SQL** schemas, managing SQL instances via the command line, and connecting databases to APIs using ORMs such as **Prisma**. Additionally, automated processes for adding new content powered by **PostgreSQL**.
- Frontend Development
  - Strong skills in **JavaScript**, **React**, **HTML**, and **CSS** (including **SASS** and **Tailwind**). Developed standalone frontend clients and built full-stack applications using **Next.js**.
  - Proven track record of collaborating with stakeholders to deliver successful, data-driven features through **A/B testing**.
- Data Engineering
  - Architected and led work on a Python data pipeline, enabling users to run pre-trained machine learning models and visualise output datasets in a React frontend.
  - Features included uploading custom datasets, parallel model execution, and user-defined data transformations.
- Infrastructure and Deployment
  - Containerised Web Applications using **Docker** and deployed them to **AWS** cloud infrastructure using **Terraform**, or using YAML Business Templates for deployment to **Kubernetes**.

Work Experience

January 2024-
March 2025

Software Engineer, *On the Beach*, 5 Adair Street, Manchester, UK.

- Rearchitected part of the system to enable parallel data fetching of CMS content and package data through GraphQL federation, which implemented microservices architecture to significantly improve scalability and efficiency.
- Collaborated with stakeholders to optimise SEO performance by refactoring code to reduce client bundle size and shifting to server-side rendering, which together contributed to a 10% reduction in LCP (page load time) on key landing pages within 12 months. Additionally, automated sitemap generation, de-indexed broken links and added metadata for the new Ireland site to improve search visibility.
- Contributed to maintaining and improving the Next.js application. Introduced sustainability badging and chatbot integration to enable large group bookings. Improved user engagement and conversion were validated using A/B testing.

October 2022-
October 2023

Software Engineer, *Naimuri*, Capstan House, Salford Quays, UK.

- Took a leading role in the alpha development of a comprehensive workflow tool using TypeScript/Java microservices and React. By automating key business processes and reducing manual effort, we streamlined operations and secured successful customer funding to deliver a production solution.

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- Then led the development of a data pipeline visualisation framework using FastAPI, powered by in-house pre-trained machine learning models. This was designed for customer use cases such as insider threats and organisational engagement.
- Architected greenfield distributed systems, iteratively delivering value each sprint based on customer feedback. Embraced the can-do attitude of a small company by participating in internal hackathons and knowledge shares.

Sep 2021- Sep 2022 **Graduate Software Engineer**, *BT*, Cheltenham Telephone Exchange, UK.

- Projects I worked on include a finance visualisation web application (Vue.js), Android security research and development and telecommunications software (C# ASP.NET).
- Set up and managed SSH tunnels on hardware to securely transfer data between systems.

Formal Education

October 2020- September 2021 **MSc Computer Science**, *University of Liverpool*, Distinction.

- Established a strong foundation in Computer Science theory. Studying Data Structures and Algorithms gave me a solid toolkit for writing performant, efficient code.
- Courses I enjoyed include Data Mining with Visualisation and Bioinspired Optimisation, where I implemented Neural Networks and Reinforcement Learning models in Python.

September 2016- July 2020 **BSc Mathematics**, *University of Manchester*, 1:1.

- I mastered extracting information from numerical data and practised fitting regression models, analysing business processes and modelling financial markets.
- Learned about machine learning techniques including Quadratic Discriminant Analysis and Hierarchical Clustering, but also other methods such as Time Series Analysis, Markov Chains and Randomised Controlled Trials. This involved fitting models, calculating statistics and using software to analyse datasets.

Languages

- English: Native
- German: A2 Conversational (currently learning)