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George Miller

Skills

- Backend Development
 - I prioritize scalable server-side logic to minimize 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 leveraging **Redis** for caching and request consolidation, reducing occurrences from 80,000 to 2,000 per month.
 - Expertise in designing and implementing normalized **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**). I have developed both standalone frontend clients and worked with **Next.js** to build full-stack applications.
 - 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 visualize output datasets in a React frontend.
 - Features included uploading custom datasets, parallel model execution, and user-defined data transformations.
- Infrastructure and Deployment
 - Containerized Web Applications using **Docker** and deployed them to **AWS** using **Terraform**, or using YAML Business Templates for deployment to **Kubernetes**.

Work Experience

January 2024- **Software Engineer**, *On the Beach*, 5 Adair Street, Manchester, UK.

- March 2025
 - Rearchitected part of the system to enable parallel data fetching of CMS content and package data through GraphQL federation, significantly improving scalability and efficiency.
 - Worked with stakeholders to optimize SEO performance by autogenerating sitemaps, refactoring code to reduce client bundle size, and shifting to server-side rendering. Improved search visibility by adding metadata for the new Ireland site and ensuring broken links were de-indexed. Achieved a 10% reduction in LCP (page load time) on key landing pages within 12 months.
 - Collaborated on maintaining and improving the Next.js application. Introduced sustainability badging and chatbot integration to enable large group bookings.

October 2022- **Software Engineer**, *Naimuri*, Capstan House, Salford Quays, UK.

- October 2023
 - 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.

- 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 organizational 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- **Graduate Software Engineer**, *BT*, Cheltenham Telephone Exchange, UK.
- Sep 2022
- Quickly immersed myself into the routine of full-time software engineering. Projects I have worked on include a finance visualisation web application (Vue.js), Android security research and development, telecommunications software (C# ASP.NET) and hardware networking.
 - Used data transfer techniques programmatically, such as SSH and JSON over HTTP to combine code running on different systems.

Formal Education

- October 2020- **MSc Computer Science**, *University of Liverpool*, Distinction.
- September 2021
- Pursued an MSc in Computer Science to refine my software engineering skills. Establishing a strong foundation in Computer Science theory in addition to Mathematics, by studying Data Structures and Algorithms in detail, has enhanced my ability to write efficient and scalable code.
 - Courses I enjoyed most are Data Mining with Visualisation and Bioinspired Optimisation; implementing Neural Networks and Reinforcement learning models in Python from scratch using NumPy arrays.
- September 2016- **BSc Mathematics**, *University of Manchester*, 1:1.
- July 2020
- 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 (learning)