

Arjan Singh Hayre

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Profile

Full-stack and backend engineer with experience in distributed systems, microservices, and applied machine learning. Delivered production workflows, backend services, and real-time data tools across multiple internships. Strong grounding in C++ systems programming through academic projects involving concurrency, memory management, and low-level optimisation.

Education

Imperial College London, UK

MEng/BEng Electronics and Information Engineering (Predicted Upper second class)

2022–2026

A-Levels: Mathematics (A*), Physics (A*), Further Mathematics (A)

Experience

Full-Stack Developer — Summer Internship

Jul 2024 – Oct 2024

Xcceler8 Ltd (Client: WeBook), Remote

- Built booking and reservation workflows using Camunda BPMN and Spring Boot microservices; supported a service handling on the order of *hundreds of thousands of HTTP requests per day*, improving system reliability and cutting down manual corrections in production.
- Designed PostgreSQL schemas and introduced Redis caching for high-traffic endpoints, cutting median API response time from roughly 180 ms to 95 ms under peak load.
- Extended API gateway to enforce rate limiting and request validation, enabling the system to sustain bursts of concurrent requests with minimal failures.
- Collaborated with product, UX and QA teams to ship regular feature releases, helping shorten release cycles and maintain consistent throughput of new deployments.

Full-Stack Developer — Summer Internship

Jul 2023 – Oct 2023

Xcceler8 Ltd, London

- Integrated Firebase Authentication and Firestore with backend services, implementing OAuth2/JWT authentication flows — improved user login stability across thousands of daily users.
- Developed RBAC (role-based access control) and access-control modules across services, tightening security and reducing the incidence of permission-related errors.
- Built internal admin dashboard components using React and Material UI; enabled support teams to manage user accounts and data queries more efficiently, reducing support-render time per request.

Backend Developer — Summer Internship

Jul 2022 – Oct 2022

Dorchester Homes, London

- Built a property-valuation assistant using Python regression models on historical sales data.
- Implemented a project-tracking and VAT automation dashboard used by operations staff weekly, streamlining internal reporting and eliminating multiple manual steps from monthly financial workflows.
- Optimised SQLite schema and queries — improved average report generation time from 2.1 seconds down to 0.7 seconds under typical load.

Technical Skills

Languages: C++, Python, JavaScript/TypeScript, Go **Frameworks:** React, Node.js, Flask, Spring Boot

Systems: Microservices, Kafka, Redis, Docker, REST **Databases:** PostgreSQL, MongoDB, SQLite **ML/AI:**

PyTorch, TensorFlow, LLM tooling (RAG, LoRA, llama.cpp) **Security:** OAuth2, JWT, RBAC, bcrypt, security headers, rate limiting **Tools:** Wireshark, OWASP ZAP, nmap, Fail2ban