

Sami Hatoum

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Skills

Languages: Java, JavaScript, Python, C, C++, SQL

Frontend & Design: React & Next.js, React Native, TypeScript, Figma, Tableau, D3.js

Backend & Databases: Node.js, Flask, FastAPI, PostgreSQL, MongoDB, Postman

AI & Data Science: NumPy, Pandas, Scikit-learn, TensorFlow, PyTorch, OpenCV, Matplotlib

DevOps & Cloud: AWS, Docker, Kubernetes, Git & GitHub, Dataiku, Jira

Experience

PricewaterhouseCoopers (PwC)

Aug 2024 – Sep 2024

Client-Side Consulting Intern

- Collaborated with a cross-functional **Agile** team to identify **120 process-level risks**, uncovering **£20K** in annual savings
- Orchestrated facility rollout to maintain **95% on-time delivery**, based on simulation scenarios and existing **SLA benchmarks**

PricewaterhouseCoopers (PwC)

Jun 2023 – Jul 2023

Software Consulting Intern (AI)

- Built a production sentiment analysis system using **TensorFlow LSTM** architecture, achieving **87% accuracy** on a balanced dataset of **25,000** customer reviews with proper train/test splits
- Containerised the model with Flask API wrapper and deployed to **AWS EC2** with auto-scaling, load tested to handle **150 req/s** with average **400ms response time**
- Implemented monitoring via CloudWatch and established model retraining pipeline triggered by accuracy degradation below **85% threshold**
- Optimised preprocessing pipeline with pandas vectorisation, reducing daily batch **processing time by 60%**

Education & Certifications

BSc Computer Science, University of St Andrews

First Class Honours, Dean's List

MSc Artificial Intelligence and Medical Imaging, University College London

Expected Graduation Sep 2026

Certifications

- AWS Certified Cloud Practitioner, Amazon Web Services
- All Certifications Completed, Dataiku Academy

Projects

Food Waste Management App

- A **React Native** food tracking app to help reduce household food waste, with 30+ beta users testing over 3 months
- Deployed Node.js REST API on **Vercel** with **PostgreSQL RDS** backend, implementing automated daily backups and **CloudWatch** monitoring
- Integrated Spoonacular **Recipe API** with **Redis caching** to suggest recipes based on expiring ingredients, achieving consistent 300ms response times under load
- Established push notifications using **AWS SNS** to remind users about approaching expiration dates
- Conducted UI/UX accessibility review using **Android Accessibility Scanner** and verified consistent 60 FPS rendering on mid-tier devices using **Android Studio Profiler**

Database Query Optimisation Tool

- A **PostgreSQL performance analyser** that automatically recommends indexes by **parsing query ASTs**, analysing EXPLAIN plans, and simulating index impact, **reducing average query time** by 80% across test datasets
- Built **production monitoring system** processing 10,000+ queries/second with sub-100ms analysis latency, containerised with **Docker** and deployed on **AWS** with auto-scaling
- Created **D3.js dashboard** visualising query patterns, index impact simulations, and cost-based optimisation recommendations, reducing debugging time by 70%

Sokoban Procedural Puzzle Generator

- A procedural content generation tool written in **Java** for a **PSPACE decision problem** – Sokoban
- Combines **stochastic generation**, entity-mapping constraints, and a **Two-Archive evolutionary algorithm** to balance challenge and diversity
- Generates **1000+ unique, playable puzzles** validated by solvers, capable of exceeding hand-crafted puzzle difficulty

Cryptographically Secure File Server

- An **end-to-end encrypted file storage system** in **Java**, supporting 50+ concurrent users
- Implemented **zero-knowledge** and **zero-trust** architecture ensuring complete data privacy with **multi-layer encryption**
- Designed **granular access control** system, managing permissions for thousands files without revealing any usernames, filenames, or the file contents