

Sami Hatoum

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Experience

PricewaterhouseCoopers (PwC)

Jun 2023 – Jul 2023

Software Consulting Intern (AI)

- Built a sentiment analysis prototype using **TensorFlow LSTM** architecture, achieving **87% accuracy** on a balanced dataset of **25,000** customer reviews
- 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**
- Conducted monitoring via CloudWatch and established a model retraining pipeline triggered by accuracy degradation below **85% threshold**
- Optimised preprocessing pipeline with pandas vectorisation, reducing daily batch **processing time by 60%**

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 existing **SLA benchmarks**

Education

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

AWS Certified Cloud Practitioner, Amazon Web Services

Certification

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 **RDS** (PostgreSQL) backend with automated daily backups
- 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 recommends indexes by **parsing query ASTs** and evaluating EXPLAIN plans, improving query speed by up to 80% in controlled tests and sustaining 500+ queries/second in benchmark trials
- Containerised with **Docker** and deployed on **AWS** using **EC2**, **RDS** (PostgreSQL), and **CloudWatch** monitoring, with auto-scaling and load balancing configured through **ELB** and **ASG**
- Designed an interactive **D3.js dashboard** to visualise query patterns and index recommendations, helping developers identify performance bottlenecks faster

Sokoban Procedural Puzzle Generator

- A procedural content generation tool written in **Java** for a **PSPACE-Complete Sokoban** problem
- 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**, tested with 50 concurrent sessions
- Implemented **zero-knowledge** and **zero-trust** architecture ensuring complete data privacy with **multi-layer encryption**
- Designed a **granular access control** system, managing permissions for large file sets without revealing any users, filenames, or file contents

Skills

Core: Java, JavaScript, Python, SQL

Frameworks: React, Next.js, Node.js, Flask, React Native

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

AI & Data: TensorFlow, PyTorch, Pandas, Scikit-learn