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
– Conducted **ROI modelling** with energy-consumption simulations to assess a proposed air cargo facility's feasibility
– Architected a facility concept with **solar power** and automation, modelling an estimated **18% OpEx reduction** based on historical cost benchmarks
– 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**

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** of varying difficulty, validated by solvers

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

Machine Learning Automated Algorithm Selection   ⌽
– A solver selection tool in **Python** enhanced using **Scikit-learn** to predict optimal solver performance per instance
– Benchmarked models against **SBS/VBS baselines** using classification and regression techniques, with feature normalisation and hyperparameter tuning to improve accuracy