

# Sami Hatoum

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## Skills

**Languages:** Java, JavaScript, Python, C, 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 market sizing and ROI modelling with energy-consumption simulations to assess a proposed air cargo facility's feasibility
- Designed a facility concept with solar power and automated cargo handling, projecting an 18% reduction in OpEx
- Managed the new facility implementation plan, allocating resources across 4 teams and ensuring 95% on-time delivery with uninterrupted operations

### PricewaterhouseCoopers (PwC)

Jun 2023 – Jul 2023

#### Digital Consulting Intern (AI)

- Developed a TensorFlow-based LSTM sentiment classifier in Python, implementing custom tokenization and grid-search hyperparameter for a validation accuracy of 88%
- Built Dataiku flow pipelines for ETL (CSV, REST APIs, SQL Server), engineered n-gram text features, and performed multi-step data cleaning, reducing missing values by 25%
- Containerised the trained model in Docker and deployed to an AWS EKS Kubernetes cluster, enabling 500 req/s real-time text classification with sub-300 ms latency
- Executed stratified k-fold (k=5) training/validation/testing cycles; implemented Python scripts and DataDog monitoring to detect model drift, maintaining a production F1-score > 0.85

## Education & Certifications

### University of St Andrews

BSc Computer Science — First Class Honours, Dean's List

### British International School of Riyadh

A Levels — Computer Science (A), Mathematics (A), Physics (A), Economics (A)

### Certifications

- AWS Certified Cloud Practitioner, Amazon Web Services Jul 2023
- All Certifications Completed, Dataiku Academy Jun 2023

## Projects

### Food Waste Management App

Sep 2024 – Present

- A cross-platform mobile application in React Native to track & manage user groceries
- Designed and deployed RESTful services on AWS Lambda & API Gateway, with PostgreSQL on Amazon RDS, scripted backups and auto-scaling policies
- Implemented TensorFlow + OpenCV pipelines for on-device image classification of grocery items
- Developed a recipe-suggestion microservice consuming Suggestic REST API calls, parsing JSON payloads and caching responses in Amazon ElastiCache to ensure sub-200 ms response times
- Configured AWS EventBridge and SNS to trigger expiry notifications for produce, helping users reduce waste through scheduled reminders
- Engineered UI/UX prototypes in Figma and implemented the designs in React Native, employing Redux for state management and achieving 90+ Lighthouse accessibility and performance scores

### PCG Dissertation Research Project

Sep 2024 – May 2025

- A procedural content generation tool written in Java for a PSPACE decision problem – Sokoban
- Combines pseudo-random generation, entity-mapping constraints, and a Two-Archive evolutionary algorithm to balance challenge and diversity. The tool produces unique, playable puzzles of varying difficulty, validated by solvers

### Cryptographically Secure File Server

Nov 2024

- A zero-knowledge, zero-trust file server. This server has no access to unencrypted data, file-keys, or filenames, with multi-layer encryption and granular access control
- Built client/server with secure data handling, key exchange, and minimal UI. Deployed on AWS with PostgreSQL

### Machine Learning Automated Algorithm Selection

Nov 2023

- A solver selection tool in Python using Scikit-learn, trained on MAXSAT12-PMS benchmark data to predict the most effective solver per instance. Evaluated models against SBS/VBS baselines using classification and regression techniques, with feature normalisation and hyperparameter tuning to improve accuracy