

Education	Imperial College London <i>Masters of Engineering (MEng) Computing - First-Class Honours</i>	June 2022	
Experience	Computer Science Teacher - Holland Park School	April 2025 - July 2025	
	<ul style="list-style-type: none">• Led instruction for GCSE and A-Level Computer Science classes (2 Year 10, 1 Year 12), taking full ownership of lesson planning, material creation and assessment.• Delivered workshops to students on practical software engineering practices, including version control, cloud computing, ML, prompt engineering, agile methodologies and cybersecurity.• Integrated real-world industry examples into curriculum, e.g. ML quantization, software bottlenecks, data mining to enhance understanding of theoretical computational methods.• Managed diverse classrooms, creating a dynamic and progressive learning environment that elevated student potential and engagement, evidenced by positive feedback from students, teachers, and parents.		
	Software Engineer - Fitch Group	April 2023 - May 2025	
	<ul style="list-style-type: none">• Led the design and development of Alpha, an asynchronous microservices platform for large-scale model processing. Enabled processing of complex financial models at 5x previous scales, cut model computation from hours to minutes, improved system reliability to 98% uptime.• Architected a scalable AWS cloud system using Python microservices, processing 1000+ concurrent model tasks.• Developed a robust API with FastAPI, handling bulk/streamed data transfer, OAuth-based authentication and authorization, rate limiting and OpenAPI documentation.• Developed a multi-queue listening strategy for custom-priority model runs, optimizing Lambda capacity and reducing processing latency by 55%.• Enabled real-time status updates for synchronous model runs using Kafka.• Built CI/CD pipelines (Bamboo, Docker, Kubernetes) for microservices, integrating automated testing, multi-environment deployments, and security scans (Xray/Veracode).• Integrated Datadog for comprehensive observability and end-to-end request tracing, reducing mean time to resolution by 70%.• Deployed Alpha across multiple environments with disaster recovery replicas via AWS CloudFormation: enhancing system resilience, recovery and geographical redundancy - improving uptime/reliability for users, offering isolated testing environments for developers and strengthening business continuity and regulatory compliance.		
	Data Scientist - Shell DSCoE	June - September 2021	
Experience	<ul style="list-style-type: none">• Developed a proof-of-concept SK-learn-like framework for causal control tasks.• Extended reinforcement learning frameworks (SK-Optimize, modAL) for internal use cases, focusing on modularity and reusability.• Used high-performance libraries (Pandas, Numpy, OpenAI Gym, Tensorforce) to streamline data processing and model optimization.		
	Research Software Engineer - Imagination Tech	June - September 2020	
	<ul style="list-style-type: none">• Worked on hardware accelerated image decompression - creating OpenCL programs to offload parallel texture decompression to GPUs.• Leveraged OpenGL for acceleration at runtime resulting in a 27% increase in processing speed.• Conducted research on emerging GPU trends to propose new improvements for future pipelines.		
	Projects	Bazaar - Ethereum Marketplace for Redeemable Fashion	2022
		<ul style="list-style-type: none">• Deployed a fully-fledged dApp that leverages smart contracts to tackle issues in e-commerce.• Followed the human-centered design philosophy; working with designers to build a novel content creation and delivery experience, and end-users to build an eBay-like shopping experience.• Developed a JavaScript backend, a suite of cost-efficient, secure Solidity smart contracts, and a React web app for listing, bidding on, offers and redeeming NFTs for physical items.• Reduced gas fees by 40% for users and saved 45% in smart contract deployment costs.	
Density - Anonymised Location Density App		2021	
Projects	<ul style="list-style-type: none">• Built an ML-based location density prediction pipeline using clustering with SK-learn in a Timescale database and statistical preprocessing (Pandas, Numpy, SK-learn).• Built a Python backend for creating Airflow DAGs for data processing and task scheduling.		
	Skills	Programming Languages: Python, TypeScript, JavaScript, Solidity, Haskell, Elixir	
		Technical: Python (aioboto, aiokafka, FastAPI, Numpy, Pandas, Pydantic), TypeScript (React, Next.js), AWS (Lambda, Fargate, Step Functions, S3, DynamoDB, MSK, SQS, IAM, EC2, EKS), Databases (PostgreSQL, MongoDB, Supabase), Machine Learning (PyTorch, LangChain, llama-index, Tensorforce), Linux, Figma.	
Languages: English, Arabic			