

Abdul Azeem Makarim

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EDUCATION

University College London

Sep 2024 – June 2028

Integrated Masters in Robotics and AI - First Class Honors

London, United Kingdom

Achievements: 140% Global Excellence Scholarship - Undergraduate Teaching Assistant for Introduction to Electronics
Relevant Modules: Machine Learning, Reinforcement Learning, Data structures and Algorithms, Object-Oriented Programming, Modeling and Simulation, Optimization, Filtering and Fusion, Systems Engineering, Control 2.

Cedar College

Aug 2022 – July 2024

Cambridge A Level - 5A/As (Physics, Further Math, Math, Computer Science, Chemistry)*

Karachi, Pakistan

Achievements: 100% Merit Scholarship, President of STEM Society, Lead Organizer Scinnova VI and VII.

EXPERIENCE

Industry Project Lead

Feb. 2026 – Present

Cisco

London, UK

- Building autonomous agents integrating APScheduler with Google A2A protocol across 15+ DevOps tool agents.
- Engineered cron, interval, and webhook trigger pipelines in Python 3.13 + FastAPI, routing tasks to a LangGraph ReAct supervisor managing sub-agents for GitHub, ArgoCD, and PagerDuty.
- Identified a provider-specific bug in the Anthropic Claude integration causing context compression failures

Software Engineer

Oct. 2024 – Present

UCL Racing

London, UK

- Engineered vision pipeline in Linux using Docker containers, Bash scripts, TCP streaming across Jetson and Pi.
- Optimised client-server inference achieving stable 30Hz execution, reducing latency by 35% under constraints.

Data Analyst

Feb. 2024 – May 2024

Cedar College

Karachi, Pakistan

- Engineered data pipeline integrating 15 atmospheric sensors, generating datasets for machine learning analysis.
- Trained machine learning models to predict atmospheric conditions on southern Sindh with 88% accuracy.

TECHNICAL PROJECTS

Multi-Agent Gmail Assistant | *LangGraph, SQLite, OAuth2*

April. 2026

- Architected 24/7 autonomous 4-subagent LangGraph orchestration reducing supervisor token usage by 68%.
- Built privacy-first architecture with local SQLite index, AES-256 encryption, zero cloud dependencies.
- Implemented tone-matched reply generation via contact profiling, MIME decoding, encrypted 7-day cache.

AI-Powered Real Estate Dashboard | *Python, React, AWS*

Jan. 2026

- Secured £1,500 (2nd Prize) at the UCL CSRI Hackathon by engineering a property intelligence platform
- Implemented interactive geospatial heatmaps and semantic search capabilities to democratize access to market
- Developed a dashboard that aggregates listing data, utilizing quantitative finance methods to provide predictive price forecasting and investment analysis.

Geopolitical AI & Finance | *Perplexity AI, Next.js, Finnhub, TypeScript*

Nov. 2025

- Engineered a Perplexity AI pipeline to automate market impact analysis of geopolitical news events.
- Integrated live Finnhub stock data to correlate global events with real-time market volatility.
- Built a React dashboard using Leaflet and Recharts to map geographic risks and visualize data trends.

SAM3 Knowledge Distillation | *Meta SAM3, NVIDIA Cosmos, YOLOv8*

Oct, 2025

- Architected an automated data engine utilizing **Meta SAM3** (Segment Anything Model) to zero-shot annotate unlabeled video streams, applying adaptive frame filtering to reduce dataset curation time by 90%
- Distilled foundation model capabilities into a lightweight **YOLOv8**, deploying **TensorRT** engine on Jetson.
- Validated model on synthetic data by **NVIDIA Cosmos**, achieving **93% mAP** on unseen environments.

TECHNICAL SKILLS

Languages: Python, C++, C, TypeScript, JavaScript, SQL, MATLAB, Bash/Shell

Robotics & Simulation: ROS 2, NVIDIA Isaac Lab & Sim, Gazebo, MoveIt, URDF/Xacro, PyBullet

AI, Agents & Vision: PyTorch, LangGraph, CrewAI, AWS Bedrock, OpenCV, Gymnasium (RL), TensorRT

Frameworks & Tools: FastAPI, Next.js, Linux, Docker, WebSockets, Git, LangSmith, SolidWorks, ANSYS