Ahmed Ahmed

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EDUCATION

Imperial College London | *MEng Molecular Bioengineering* Sep 2024 - Jun 2028 (Expected)

- First Class Honours (Year 1: **81.57%**, Year 2: **77.95%**); **Dean's List (Year 1 & Year 2, top 10%)**; **IET Future Talent Boost Scholarship (2026)**; **Year 2 Best Design Group Project Prize**. British citizen (UK & Ireland right to work).
- **Verified Marks:** Programming 2 (**93.75%**), Molecules & Energetics 1 (83.85%), Medical Science 1 (82.51%), Programming 1 (80.85%), Maths & Eng 1 (79.90%), Maths & Eng 2 (79.38%), Arabic L1 (Distinction).
- **Core Coursework:** Statistical & Probabilistic Modelling, Digital Signal Processing, Control Systems, Medical Device Design.

Cheney School, Oxford | *A-Levels: Biology (A*), Chemistry (A*), Mathematics (A*); EPQ (A*); 11 Grade 9 GCSEs* Sep 2022 - Jun 2024

INDUSTRY, RESEARCH & CLINICAL EXPERIENCE

Nanolyse Technologies Ltd. | *Commercial Strategy & Data Engineering Assistant* Jun 2025 - Present

- Owned project plans, functional specifications, and technical business cases for an AI/ML chemical speciation framework modelling pharmaceutical compounds in water and soil, securing a **£40,000 commercial grant**.
- Co-developed an installable multi-core Python package (`ProcessPoolExecutor` wrapping the USGS `IPhreeqc` C++ library), automating ingestion, cleaning, and speciation across **35,232 sensor records** into structured Excel decision models.
- Built dual-layer PowerPoint and Figma decks translating technical validation for R&D directors and commercial value for executives across **3 industry conferences**, securing **3 corporate R&D partnerships**.

Imperial College London (Ladame Lab) | *UROP Research Assistant & Data Analyst* Jun 2026 - Sep 2026

- Executed bead-based sandwich hybridisation assays for the miRFlow endometrial cancer diagnostic platform (miR-223, miR-29b), improving overall assay performance by **30%** across **50+ RP-HPLC purified conjugates**.
- Automated statistical analysis of triplicate CytoFlex/FlowJo datasets in Python (Pandas, SciPy, statsmodels) and authored Good Laboratory Practice Standard Operating Procedures for 20 stock solutions.

NHS Blood and Transplant & Oxford Epidemiology Lab | *Clinical Shadowing / Research Intern* 2022 & 2025

- Evaluated OrganOx metra liver perfusion workflows in translational trials (Oct 2025); operated automated liquid handling platforms with QA/QC calibration checks for high-throughput epidemiological studies at Oxford (Oct - Nov 2022).

AI, BIOINFORMATICS & MEDTECH PROJECTS

MedMNIST PyTorch Classifier & Grad-CAM Explainability | *Individual Developer* Nov 2026

- Built a modular PyTorch 2D medical image classification pipeline (`MedResNet` residual CNN, class-weighted CrossEntropyLoss, AdamW, cosine annealing) and pure-PyTorch Grad-CAM via forward/backward hooks, achieving **0.9673 held-out test ROC-AUC** (0.9968 val ROC-AUC) on PneumoniaMNIST with `pytest` coverage.

MYOWAVE Full-Stack Clinical Diagnostic Platform | *Project Manager & Lead Engineer* Oct 2025 - May 2026

- Won the **Year 2 Best Design Group Project Prize** building a non-invasive EHG prototype for the ENDO1000 clinical study, with a 250 Hz Python DSP engine powering NiceGUI researcher/participant portals backed by Firebase and SQLite.

Nanopore HMM Basecaller, Gene Expression Explorer & Java QC Toolkit | *Individual Developer* Jul 2025 - Aug 2025

- Implemented a 1,025-state Python/Numba JIT HMM (Baum-Welch, Viterbi) with parallel DTW alignment to GRCh38 (**81% sequence identity** vs Dorado); deployed a Streamlit transcriptomics app and multi-threaded Java 22 / JavaFX FASTQ QC suite.

LEADERSHIP, TRAINING & TECHNICAL STACK

Imperial College Hockey Club | *President (2026 - Present) & Treasurer (2025 - 2026)* May 2025 - Present

- Direct **110+ members** (+10% growth), govern a **£26,000 budget** (**£6,000** funding secured), expanded governance to 23 roles, and launched a SEND youth coaching partnership with Ealing Hockey Club.
- **Commercial Training:** Pfizer UK Molecule to Market Simulation (Nov 2026); McKinsey Forward Programme (Expected Dec 2026).
- **Technical Stack:** Python (PyTorch, scikit-learn, Pandas, NumPy, SciPy, Numba, NiceGUI, Streamlit), Java, C/C++, MATLAB, SQL (SQLite), Firebase, Git, Excel, PowerPoint, Figma, Deep Learning, Computer Vision, Grad-CAM, GLP/SOPs.