Sharaf-Eddine Boukhezer

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Education

University of Birmingham, MSci Computer Science.   Sep 2022 – Present

- First Class Honours
- **Coursework:** Machine Learning, Neural Computation, Evolutionary Computation, Computer Vision

Hong Kong University of Science and Technology, Summer Programme   Jun 2024 – Aug 2024

- Explored data modelling and design for ML workflows, alongside frameworks for building data-driven start-ups.
- Observed research in AI, robotics, and applications of ML.

Experience

Research Intern, Shanghai Jiao Tong University   Jun 2025 – Aug 2025

- Developed a StreamingCNN pipeline for portal fibrosis detection on gigapixel liver slides, reaching 70% accuracy while using 6× less GPU memory.
- Designed PyTorch preprocessing pipelines integrating ASAP and MIR for 231 WSIs, enabling large-scale analysis.

Teaching Assistant, University of Birmingham   Sep 2024 – Dec 2024

- Guided over 80 students in OOP (Java), clarifying concepts in inheritance, polymorphism, and data structures.
- Reviewed and debugged student projects, refining design patterns and time–space complexity awareness.

Research Assistant, University of Birmingham   Jan 2024 – May 2024

- Trained models for surface-EMG activity recognition, Optimising feature extraction and classification accuracy.
- Processed and evaluated models, improving recognition performance on limited data ($\approx$20% of the dataset).

Projects

The Karta Project: Closed-Loop Digital Payment System, Founder   Dec 2024 - Present

- Deployed a POS terminal app for a closed-loop payment ecosystem, powering data-driven transaction analysis across 5 pilot merchants.
- Currently developing ML models for fraud detection, spending patterns, and real-time anomaly monitoring.

AI Crew Scheduling Optimiser (github.com/sharafedd/repo)   Jan 2025 - Mar 2025

- Built simulated annealing and genetic algorithm models in Python for aircrew scheduling, enhancing solution accuracy by 25% through optimised parameter tuning.
- Analysed heuristic and stochastic methods for constraint handling, feasibility, and reduced runtime by 60%.

Drawly: AI Full Stack Functional Application (github.com/sharafedd/repo)   Jan 2024 - Apr 2024

- Led a team and implemented custom APIs for prompt generation, powering daily and weekly challenges.
- Engineered a ranking system backend, facilitating scoring and real-time leaderboard updates.

Neural Networks in times series analysis   Sep 2023 - Dec 2023

- Evaluated CNN, LSTM, and CNN-LSTM models for time-series forecasting, measuring performance using RMSE.
- Analysed temporal dependencies and feature extraction to improve prediction accuracy on sequential data.

Technologies

Languages: Python, C, Java, Haskell, Typescript, HTML/CSS, SQL

Frameworks & libraries: PyTorch, TensorFlow, Keras, NumPy, pandas, Matplotlib, OpenCV, Plotly

Technologies: Jupyter Notebook, Google Colab, Git, Docker, Hugging Face, Power BI, Tabular

Certifications

JPMorgan Chase Software Engineering Virtual Experience   Aug 2023

Red Hat Kubernetes University Student Bootcamp   Jul 2023