Riccardo El Hassanin

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Multi-disciplinary engineer driven by a passion for novel and cutting-edge Machine Learning/AI technologies, with a strong foundation in software development and expertise in creating and implementing high-quality, innovative, and scalable solutions. Known for tenacity and relentless commitment to continuous learning, blending technical, analytical and research skills with creative problem-solving.

EDUCATION

Master of Engineering (MEng) in Electrical and Electronic Engineering *2019 – 2023*
Imperial College London LONDON, UK

- Classification: **First Class Honours**
- **Relevant Modules:** Probability and Statistics, Machine Learning, Deep Learning, Artificial Intelligence, Advanced Signal Processing, Computer Vision and Pattern Recognition, Large Data Processing, Coding Theory, Optimisation, Embedded Systems, Corp Finance.
- **MEng Thesis:** proposed a novel Complex-valued Deep Canonical Correlation Analysis (CDCCA) model that leveraged the power of statistical tools and complex-valued neural networks to study the intrinsic relationships between two financial time series datasets.

International Baccalaureate (IB) Diploma *2015 – 2019*
Gems World Academy DUBAI, UAE

- Total Score: 43/45 | Higher Level Subjects: Mathematics (7/7), Physics (7/7), Business Management (7/7) | Salutatorian Award (2019)

WORK EXPERIENCE

Data Scientist – Internship (3-months) *April 2024 – July 2024*
Agreena LONDON, UK

- Developed and optimized deep learning models for large-scale data analysis, focusing on satellite scene quality classification (using optical satellite imagery from Sentinel 2) and deployed them to production environments with VertexAI and Google Cloud services.
- Conducted research on cutting-edge technologies (CNN, EfficientNet, ResNet, HuggingFace Vision Transformers) to optimize and improve model performance by 6% reaching 97%.
- Obtained hands-on experience in extracting, cleaning, and preparing large-scale remote sensing data for ML products, enhancing data quality, integration, and functionality across diverse inputs and models.

Machine Learning Engineer – Contractor *October 2023 – January 2024*
FireX.ai LONDON, UK

- Engineered deep learning models using multi-modal remote sensing datasets (optical and SAR satellite imagery) for predictive modelling to aid the assessment of wildfire risks for environmental risk analysis and disaster mitigation.
- Gained practical experience in implementing complex algorithms and leveraging deep learning frameworks in cloud environments, writing high quality and modular production grade code (with unit, integration and end-to-end testing) in a fast growing start up.

ARM Project Consultant *May 2022 – July 2022*
Imperial College London – ARM LONDON, UK

- Led a team of 6 to build an open-source software and data processing model to perform local speaker recognition in real-time, which correctly identified 90% of speakers in roughly 1.3 seconds per inference.
- Developed a low-latency Python-based algorithm to extract acoustic features from voice spectrograms using a CNN-based model and a cosine-similarity metric to match the speaker to a person in the database, significantly enhancing speaker identification through robust data analysis, image processing, and predictive modelling techniques.

Undergraduate Researcher *June 2021 – September 2021*
Imperial College London LONDON, UK

- Applied advanced statistical analysis and data processing techniques to processed data from NASA's Mars' InSight mission to disentangle the seismic signals from Martian environmental interferences and uncover meaningful patterns.
- Contributed to team research and enhanced communication skills delivering reports, collecting results and research findings.

PROJECTS

NotiSound – Smart Sound Recognition Device *January 2022 – March 2022*

- Led a team of 4 to build a low-latency data processing system that leverages machine learning to recognize patterns in large datasets for real-time sound classification of doorbell and fire alarm noises in a house environment.

Mars Rover Project *May 2021 - June 2021*

- Worked in a team of 6 to design and build an autonomous Mars Rover prototype able to avoid obstacles and map its travelled path.

SKILLS

- Proficient in **Python** with expertise in **PyTorch, TensorFlow, HuggingFace Transformers** for **Machine Learning** and **Deep Learning applications**, as well as **NumPy, Pandas, SciPy, Scikit-Learn, OpenCV, Matplotlib, Seaborn** for **data analysis** and **manipulation.**
- Skilled in **C++** for high-performance, scalable software development and **MATLAB / Simulink** for modelling and simulations.
- Adept with **Linux** and **Git** for software development, version control, and system administration.
- Experience with cloud infrastructure and cloud computing, including **AWS** and **Google Cloud Platform**.
- Proficient with **Arduino** and **Raspberry Pi** in building and programming embedded systems.
- Familiar with **SQL** for database management and experienced with **HTML**, **CSS**, and **JavaScript** for front-end web development.
- Skilled at **self-teaching** novel concepts for new projects, with significant experience in collaborating and leading diverse teams.
- **Languages** – Italian: native | English: fluent | Spanish: intermediate