Asia Belfiore

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EDUCATION

Imperial College London **London, UK**
MSc in Advanced Computing *September 2024 - Ongoing*
- *Relevant Modules*: Reinforcement Learning, Deep Learning, Statistical Information Theory, Deep Graph-Based Learning, Natural Language Processing, Privacy Engineering, Software Engineering for ML Systems.

Queen Mary University of London **London, UK**
Joint BSc in Computer Science and Mathematics *September 2021 - July 2024*
- Graduated with a First Class Degree and awarded the EECS Prize for Outstanding Academic Achievements.
- *Relevant Modules*: Algorithms and Data Structures, Object-Oriented Programming, Linear Algebra I-II, Bayesian Decision and Risk Analysis, Security Engineering, Neural Networks and Deep Learning.

EXPERIENCE

Queen Mary University of London (QMUL) **London, UK**
Demonstrator / Teaching Assistant *September 2023 - January 2024*
- Supervised and graded groups of **100+** first and second-year EECS undergraduate students.
- Provided tailored and one-to-one teaching in English and Italian in **Java** and **Python** Programming, Algorithms and Data Structures.

PROJECTS AND RESEARCH

Privacy-Preserving Synthetic Genomic Data Generation using Large Language Models **London, UK**
Postgraduate Dissertation Research, Imperial College London *April 2025 – Ongoing*
- Exploring the applications of Large Language Models (up to **13B** parameters) for the generation of synthetic and mock genetic sequences with differential privacy augmented algorithms using **Python** and **PyTorch**.
- Performing adversarial evaluation through Membership Inference Attacks and utility evaluation through genome-specific measures, including Linkage Disequilibrium.

Acute Kidney Injury Prediction System using Machine Learning Models **London, UK**
Postgraduate Course Group Project, Imperial College London *January 2025 - March 2025*
- Built a real-time **Python** and **Docker**-based paging system to detect Acute Kidney Injury from temporal changes in patients' creatinine levels using a Decision Tree classifier trained on **7000+** samples.
- Achieved **>96%**model diagnosis accuracy and maintained continuous service with **<0.05s** paging latency.

Patronizing and Condescending Language Recognition with Language Models **London, UK**
Postgraduate Course Group Project, Imperial College London *January 2025 - March 2025*
- Implemented a **RoBERTa**-based model for PCL detection based on the *SemEval 2022 'Don't Patronize Me!'* Task dataset, achieving **0.57** F1 and **0.89** accuracy, improving the official SemEval benchmark F1 by **+0.08**.
- Employed custom NLP augmentation strategies on **10K+** paragraphs, including **synonym replacement** and **backtranslation**, and implemented baseline **BiLSTM** and **SVM** models using **PyTorch** and **Keras**.

Applications of Deep Learning for Genetic Risk Prediction of Crohn's Disease **London, UK**
Undergraduate Dissertation Research, Queen Mary University & Dante Labs *September 2023 – May 2024*
- Analysed large (**100K+**) genomic VCF datasets using **Python**, **Pandas, Docker, PLINK** and **SAMtools**.
- Implemented multiple custom Deep (up to **10+** layers) Neural Network architectures using **PyTorch**.
- Built a web-based visualisation dashboard using **JavaScript**, **Vue** and **Flask**, and graphing libraries to allow user genome-based prediction and to showcase the research's results.

AWARDS AND EXTRACURRICULARS

Lead The Future, *STEM Mentee* *2023 - Ongoing*
QMUL EECS Final Year Prize for Outstanding Academic Achievements, *Award Winner* *2024*
National Italian Excellence Honours Roll (MIUR), *Award Winner* *2021*
Italian Problem-Solving Olympiads (High School - Individual and Team), *National Finalist* *2017 - 2018*
Highest Academic Performance (High School), *Yearly Award Winner* *2016 - 2021*

SKILLS & INTERESTS

Languages: Italian (Native), English (Fluent, CEFR Level C2), Spanish (Basic), French (Basic).
Skills and Tools: Problem-solving, Leadership, Organization, Communication, Data Visualization, Graphic Design; Figma, Canva, PowerPoint, Keynote.
Programming: Python, Java, NumPy, Pandas, PyTorch, Scikit Learn, Matplotlib, Docker, HTML, CSS.