Emilia Agasi

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ABOUT ME

I am interested in research at the intersection of biomedicine and informatics to tackle challenges in healthcare. Eager to contribute to impactful projects, from designing decision support systems to adapting models for segmentation and drug design, I put a focus on addressing key decision points in clinical and preclinical practice. Through self-directed learning throughout projects, I have gained skills to leverage large data sets using different modelling approaches. Having worked in various labs, I enjoy the multinational, interdisciplinary and collaborative environment and the freedom to manage my own projects. I like to pursue projects that are challenging with a structured approach and most importantly, optimism. In my free time, I love to cycle, read and play competitive metro memory.

EXPERIENCE

Graduate researcher at the Wolfson Institute for Biomedical Research, UCL *(Master's thesis)*
📌 London, UK (04 / 2023 – 09 / 2023)

- Deployed and evaluated ML/DL models for classification of promiscuous compounds for drug repositioning in the UCL drug discovery lab.
- Performed large-scale data collection and mining of the ChEMBL database, modelling and visualisation using relevant python libraries (NumPy, Pandas, Seaborn), implementation of models (TensorFlow, Scikit-learn) and explainability analysis (SHAP). Results presented novel predictors of compound promiscuity.
- The associated MSc dissertation was graded 82.7% and nominated for the UCL Dean's Research Prize.

Researcher at the Department of Precision Medicine, Maastricht University *(Bachelor's thesis)*
📌 Maastricht, NL (04 / 2022 – 07 / 2022)

- Executed an ablation study at the D-Lab to assess the effect of architectural modifications on U-Net performance in a myocardial segmentation task.
- Pre-processed MRI images, trained and validated models in PyTorch and devised steps for clinical implementation. Segmentation performance was comparable to leading approaches in the ACDC.
- Organised and co-lead a workshop on radiomics and AI for segmentation at the annual AI4Imaging conference organised by the lab. The BSc thesis was graded 88.5%.

Project leader developing individualised patient decision aid (iPDA) *(Honours programme of the medical faculty)*
📌 Maastricht, NL (09 / 2020 – 04 / 2022)

- Developed an AI-based iPDA for prostate cancer patients in a team of honours students in collaboration with Belgian company Comunicare, Maastricht University, patients and clinician's advisory boards.
- Contributed to implementing a risk-prediction algorithm into a web-app developed for patients.
- Managed key steps including a clinical trial application, ethical approval, medical device registration, a research grant application, patient consenting and scientific writing and presenting.

Research intern at Walk with Path Ltd *(Cross-institutional collaboration with Maastricht University)*
📌 London, UK (04 / 2021 – 06 / 2021)

- Investigated the use of a novel insole PathFeel to improve gait in patients with multiple sclerosis and Parkinson's disease. Explored embedded AI for personalised patient care and real-time physical stimulation for individualised balance improvement based on physiological data.
- Interviewed patients and clinicians to gain understanding of stakeholder expectations and gap in the clinic.
- Recorded results and presented to team leaders within the company.

EDUCATION

MSc Drug Design

📌 University College London, UK (09 / 2022 – 09 / 2023)

- Course with a focus on computational biology and bioinformatics in a drug development context.
- Key aspects include: Bio- and cheminformatics, patient stratification for precision medicine, the clinical trial process, drug target identification, intellectual property.
- Grade: Distinction

BSc Biomedical Sciences

📌 Maastricht University, NL (08 / 2019 – 07 / 2022)

- Extensive foundation in biomedicine, bioinformatics, systems biology and precision medicine.
- Relevant modules include: Biology of cancer, cell signalling, genetics, pathology and mechanisms of disease, systems biology and multiomics, statistical methods, critical review of medical devices and a minor in pharmacology.
- Contributed to the open science platform WikiPathways with the rare disease pathway and network analysis, featured on the homepage.
- Grade: 76.38%

COURSES & CERTIFICATES

100 days of code

📌 Udemy (09 / 2022)

Supervised machine learning: Regression and classification

📌 Stanford online (08 / 2022)

Introduction to responsible AI

📌 Google (08 / 2023)

Data science with Python CS109x

📌 HarvardX (Present)

ADDITIONAL

Nationality | Germany, The Netherlands

Languages | English (IELTS score of 8.0), German (Native), Dutch (Native), French (B1)

Technical skills

- Python for data analysis and ML/DL modelling using relevant libraries (PyTorch/TensorFlow, SHAP, Seaborn, Pandas, Matplotlib, NumPy, scikit-learn, RDKit)
- Data curation and management in MySQL
- Computational biology and bioinformatics for analysis of molecules and cell signalling pathways (PyMol, GOLD, Cytoscape, PathVisio, MOE, Blast)
- Statistical data analysis and visualisation (SPSS and Python)
- Academic writing and presenting

Research themes | Precision medicine, AI for healthcare, Multimodal biomedical data