

Hussein Kassir

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EXPERIENCE

Queen Mary, University of London
Genomic Data Scientist

London, United Kingdom
Apr 2025 – July 2025

- Queried large-scale phenotypic and genotypic datasets (IMPC, Open Targets) using Python, R, and Unix shell scripting.
- Mapped mouse model phenotypes (IMPC Gene Essentiality) to human rare disorder traits to uncover novel gene-phenotype associations.
- Integrated paralogy and gene essentiality data across >8000 mouse and human genes to investigate compensation mechanisms influencing variable disease penetrance and side effects profiles.
- Engineered reproducible data pipelines with Git version control, supporting collaboration with bioinformaticians and researchers.
- Leveraged Support Vector Machine (SVM) models to identify correlations between molecular pathways and adverse drug reactions using a similarity-based scoring approach.

Postgraduate Research Assistant Jun 2024 – Dec 2024

- Designed a variant calling pipeline using GATK4 in Bash to analyse whole exome sequencing data (400 Patients) leveraging Genomics England HPC cluster.
- Deployed a ML clustering model in R for hierarchical relationship to stratify genes based on phenotypic similarity.
- Integrated Proteomics data to identify links between variant location in the protein domain and phenotypic severity.
- Developed logistic regression models in R to predict clinical phenotypes from multi-dimensional genomic predictors including gene and variant type.
- Assessed Variants of Uncertain Significance (VUS) using clinical and population databases to establish their functional and clinical impact and inform ACMG/AMP classification.

Ezeldin Pharmacy Beirut, Lebanon
Chief Pharmacist Apr 2022 – Dec 2023

- Supervised two pharmacy staff to ensure accurate dispensing of medications, maintaining compliance with clinical standards and ensuring patient safety.
- Produced financial and inventory reports to guide strategic decisions, including optimising stock levels, implementing generic substitutions, and renegotiating supplier contracts.

Assistant Pharmacist Sep 2019 – Mar 2022

- Produced and reviewed administrative reports, stock records, and regulatory documentation in line with health data requirements.
- Translated **complex therapeutic knowledge into clear recommendations**, improving patient satisfaction by 12.3% and adherence.

EDUCATION

MSc Genomic Medicine, Queen Mary University of London (Distinction) Jan 2024 – Jan 2025
Modules covered include Bioinformatics, Molecular Pathology of Cancer, Genomics of Common and Rare Diseases, Ethics.

BS Pharmacy, Lebanese International University Oct 2011 – Jul 2018
Modules covered include Pharmacogenomics, Therapeutics.

SKILLS

Programming & Data Analysis: Python, R, Bash, SQL, statistical modelling, machine-learning workflows, data wrangling.
Bioinformatics Tools & Methods: GATK, PLINK, Git Version Control, HPC workflows.
Organisational Skills: Meeting support, records management, inventory systems, reproducible data pipelines.