FAITH OGUNDIMU

faithogun12@gmail.com | faithogundimu25@rcsi.com | +353 (0) 899 727 537 | Ireland

LinkedIn | GitHub | Website

PROFESSIONAL SUMMARY

Data Scientist and Bioinformatician with expertise in developing predictive models for cancer outcomes using multimodal genomic and clinical data. Currently pursuing PhD research applying neural networks and ML pipelines to decode regulatory mechanisms in breast cancer, with hands-on experience building models that outperformed classical baselines and published benchmarks on large-scale genomic datasets (TCGA, ENCODE). Proven track record of translating complex biological problems into computational solutions, from synthetic lethality target discovery to automated biomarker prioritization systems. Passionate about leveraging deep learning to accelerate precision medicine and improve patient outcomes through interpretable, production-ready ML models.

EDUCATION

Royal College of Surgeons Ireland (RCSI) 2025 - 2029

Doctor of Philosophy (PhD) in Cancer Genomics and Epigenomics, Machine Learning and Bioinformatics

- Investigating non-coding driver mutations in breast cancer using large-scale datasets (TCGA, ICGC, ENCODE) and ML-based integration of chromatin accessibility, mutation, expression and spatial transcriptomic data.
- Developing machine learning approaches including Hidden Markov Models and deep learning methods (convolutional neural networks, multilayer perceptrons) to prioritize candidate non-coding drivers from >5,000 breast cancer whole genomes; implementing CRISPR-based validation in breast cancer cell lines.
- Creating 3D breast tissue-specific regulatory maps by integrating single-cell ATAC-seq data with ENCODE regulatory elements to focus analysis on the 98% non-coding genome where driver mutations remain largely uncharacterized.

Dublin City University (DCU) 2021 - 2025

BSc. in Genetics and Cell Biology (GCB) | First Class Honours (1.1) | Ranked 2nd & Dean's Honour List x4

Final Dissertation: *Using neural networks and foundation models to understand gene regulation in the MCF-7 breast cancer cell line*

PROFESSIONAL EXPERIENCE

AI Partner Catalyst: Accelerate Innovation with Google and ElevenLabs December 2025

Oncydra - Voice First Oncology - | GitHub | Live Link | Demo Video

- Developed Oncydra, a voice-first AI oncology care platform, by architecting 7 Cloud Run microservices with 26+ Google ADK agents across multiple orchestration patterns (Sequential, Parallel, Loop, Review, HITL, Fan-Out/Gather, Critique) to deliver real-time symptom tracking, treatment timeline management, and patient advocacy preparation.
- Built dual-interface system: patient-facing voice check-ins with AI-powered phone calling (Twilio + ElevenLabs) for appointment booking, and clinician dashboard with consultation transcription, SOAP note generation, risk alerts, and human-in-the-loop approval workflows.

AI Agents Intensive Hackathon with Google December 2025

C.O.R.E. — Coordinated Oncology Readiness Engine - | GitHub | Demo Video

- Engineered a 9-agent multi-agent system using Google ADK to automate cancer MDT case preparation, implementing ParallelAgent orchestration for 5 concurrent specialist agents (EHR, Pathology, Radiology, Genomics, Contraindications) and SequentialAgent coordination for a 4-stage genomics intelligence pipeline; achieved 100% status accuracy and reduced genomic analysis time from 60 to 3 minutes per patient (~95% reduction).
- Integrated ClinicalTrials.gov, PubMed/NCBI E-utilities, and Google Search APIs for real-time clinical trial matching and literature evidence synthesis; deployed to Vertex AI Agent Engine with InMemorySessionService state management and Streamlit dashboard for live execution monitoring.

Google October 2025

2025 Google Ireland Hackathon by BGN - TestBuddy (Demo Videos)

- Competitively selected from 500+ applicants to participate in a 3-day Google Ireland Hackathon focused on developing scalable cloud-based solutions using Google Cloud Platform.
- Co-developed TestBuddy, an AI-powered driving education platform achieving 2nd place, as measured by judges' scores on innovation, presentation and technical implementation, by integrating adaptive testing algorithms with Google Cloud APIs (Maps, Vision AI, Cloud Run) and implementing real-time test booking functionality.

University College Dublin June 2025 - August 2025

Breakthrough Summer Research Scholar (BioSLATE - Biomarker Selection and Synthetic Lethality Analysis for Therapeutic Exploration in high-grade serous ovarian cancer (HGSOC)) - BioSLATE Website | GitHub (BioSLATE) | GitHub (OncoSynth)

- Identified synthetic lethal targets in HGSOC, as measured by statistically significant CNA–CRISPR correlations across >500 patient tumours, by integrating TCGA CNA profiles, DepMap CRISPR screens and gene essentiality models within a high-throughput biomarker discovery pipeline; deployed results via an interactive Streamlit app for biomarker nomination and visual exploration.
- Built and scaled OncoSynth, a command-line multi-agent system using CrewAI to automate literature mining, druggability scoring, and clinical trial linkage, by developing modular predictive workflows for translational cancer target discovery.

Royal College of Surgeons Ireland (Final Year Dissertation) January 2024 - March 2024

Visiting Student Researcher - GitHub

- Built a feed-forward neural network on the HPC MeluXina supercomputer to predict chromatin accessibility in MCF-7 cells from nine epigenetic features (>2.8M bins), achieving 98% accuracy and outperforming classical baselines and published models.
- Applied LOCO and SHAP analyses to rank feature importance and benchmarked against the GET foundation model, identifying H3K4me1 as the strongest enhancer-linked predictor independent of DNA sequence features.

Virtual Metabolic Human (Virtuome) May 2024 - July 2024

Research Intern

- Performed biocomputational modelling and visualisation of >1000 drug-metabolism pathways, improving pipeline efficiency by ~45%, and co-authored a Coeliac Society report and infographic translating digital health data into patient insights.

Applied Process Company (APC) Ltd. January 2024 - August 2024

Analytical Intern

- Independently executed plasmid DNA extraction and quality-control workflows for high-priority biopharma projects, completing ~80% of assays autonomously and ensuring GLP-compliant documentation and data integrity for downstream computational analysis with HPLCs and Agilent OpenLab ChemStation.

Royal Victoria Eye And Ear Hospital July 2023 - September 2023

Histopathology Summer Intern

- Streamlined histopathology workflows and digital data tracking in Clinisys WinPath, reducing turnaround times by 60%, and conducted microtomy, H&E staining, and exome-sequencing analyses to support research on uveal melanoma prognostics in young patients.

SKILLS

Bioinformatics & Data Science: NGS Analysis, Genomic Databases (TCGA, DepMap, ENCODE), Statistical Modelling, GWAS, Workflow Automation, Biostatistics, Data Visualisation (Matplotlib, Seaborn, ggplot2), Docker

Programming & Scripting: Python, R, Bash, Perl, Markdown

Machine Learning & AI Frameworks: Scikit-learn, TensorFlow/Keras, XGBoost, PyTorch, LangChain, Google Cloud Platform (GCP), Vertex AI, Multi-Agent Architectures (CrewAI, Google ADK), Retrieval-Augmented Generation (RAG)

Notebook & App Development: Streamlit, Jupyter, Colab, FastAPI, React.js, Material UI, Firebase, Gemini APIs

Experimental and Lab Techniques: MiniPrep, NanoDrop 8, Biological Safety Cabinet, SDS-PAGE, HPLC (AEX), SoloVPE, ELISA, pDNA and gDNA Extraction, qPCR

Languages: English (Native), French (Professional Working Proficiency), Irish (Conversational)

GRANTS & SCHOLARSHIPS

Government of Ireland (GOI) Postgraduate Scholarship (€136,000, 18% success rate) – Nationally competitive award recognising exceptional research potential.

RCSI Top-Up Research Grant (€10,000) – Selective supplement to GOI Scholarship supporting CRISPR-based validation of computationally predicted non-coding driver mutations in breast cancer.

Breakthrough Cancer Research Summer Scholarship (€3,000) – National cancer research award supporting hands-on projects in poor-prognosis cancers.

CONFERENCES & PRESENTATIONS

BRS Research Day, DCU (Apr 2025) – Poster: Using neural networks and foundation models to understand gene regulation in the MCF-7 breast cancer cell line

Conway Institute Research Festival, UCD (Oct 2025) – Poster: BioSLATE – Biomarker Selection and Synthetic Lethality Analysis in HGSOC.

PUBLICATIONS

DrugMap: A genome-scale visualisation of human drug metabolism *(manuscript in preparation)*

ACADEMIC DISTINCTIONS & AWARDS

Conway Institute Research Festival – Poster Commendation (Perfect 30/30)
Breakthrough Cancer Research – Best Lay Presentation Award (2025)
BSc. Genetics & Cell Biology – First-Ranked (Years 1–2), Second-Ranked (Years 3–4), Salutatorian & Dean's Honours List
Bsc. Faculty of Science & Health - Undergraduate Academic Achievement Award
FSH Academic Scholarship