Gobikrishnan Subramaniam

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Aspiring to pursue a career in cancer biology to leverage system biology and multi-omics approaches in advancing precision oncology, with a focus on developing novel biomarkers and therapeutic targets for better diagnosis and treatment.

Education

M.Sc., Molecular Biology and Biotechnology, Queen's University Belfast, UK **2022 - 2023**

- Achieved 2:1 degree with commendation
- **Relevant modules:** Advanced Molecular biology, Protein structure and function, Biotechnology, Foundation for research, and Bioinformatics and System Biology
- **Dissertation:** *Network Biology of Renal Cell Carcinoma Drug Resistance and Response*

B.Sc., Biotechnology, PSG College of Arts & Science, Coimbatore–14, India **2019 - 2022**

- CGPA: 7.62/10.00 (Equivalent to a UK 1st)
- **Relevant modules:** Biochemistry, Cell biology, Diagnostic biotechnology, Microbiology, Genetics, Molecular biology, Immunology, rDNA technology, Genomics and proteomics, Bioinformatics, animal biotechnology
- Mastered various molecular biology techniques through extensive laboratory practice
- Served as the voice of my peers in my capacity as class representative during the 2020-2021 academic year

Research Experience

Visiting scholar, Overton lab, Queen's University Belfast, Belfast, UK **Dec 2023 – Present**

- Provided technical assistance to the group including managing user accounts, system updates and handling HPC queries
- Dockerized NetNC and updated its codebase, reducing deployment time by 70% and enabling scalable analysis of over 1000 samples
- Maintained and managed TMA-Navigator, a web application for analysing tissue microarray data, ensuring maximum uptime and coordinated the rewriting of the website

Research intern, Overton lab, Queen's University Belfast, Belfast, UK **May 2023 – Sep 2023**

- Analysed microarray data from two different studies (SuMR clinical trial & SCOTRRCC study), comprising 192 samples from metastatic renal cell carcinoma (mRCC) patients administered Sunitinib
- Constructed a gene co-expression network using NetNC based on the ranked gene lists from DEA and discovered four putative modules involved in Sunitinib resistance in mRCC, interpreted in the context of current literature
- Presented and defended my findings to the research group and at a monthly journal club

BioHackathon Europe 2024 (Perturb-bench) **Nov 2024**

- Integrated the *GenKI* toolkit into a Nextflow pipeline and benchmarked it against other models with the help of teammates
- Implemented GPU acceleration for *GenKI* toolkit, enabling analysis of a 3000-cell scRNA-seq dataset in under 1 hour
- Presenting a tutorial on scGen at the ISMB/ECCB 2025 Tutorial track, having prepared all necessary materials

The Sixth Annual Structural Variant and Pangenomics Hackathon at BCM **Aug 2024**

- Developed the *MoVana* pipeline using Cromwell, processing 71,000 SVs from the ICGC dataset to predict functional outcomes of various mosaic variants based on allele frequency
- Act as tech lead to the development of the pipeline and assisted with maintaining the GitHub repository
- Presented project outcomes to other teams, culminating in a collaborative research publication in F1000Research highlighting potential changes for the following year

Collaborative Bioinformatics Hackathon **Mar 2025**

- Developed a Nextfow pipeline for GLIMPSE2, a tool for low-coverage whole-genome sequencing imputation for scalable and effective deployment
- Awarded "the most collaborative team" in the hackathon, highlighting our effective teamwork and communication and published the results in BioHackrXiv

Teaching Experience

Teaching Assistant, Queen's University Belfast **Jan 2025 – Apr 2025**

- Taught systems medicine module (SCM8152) for 20 students, covering network biology and patient stratification for multi-omics analysis

Publication

Sabata, S., Kubica, J., Gupta, R., Ericson, L. W., Atanda, H. C., Subramaniam, G., … Busby, B. (2025, June 4). Addressing Background Genomic and Environmental Effects on Health through Accelerated Computing and Machine Learning: Results from the 2025 Hackathon at Carnegie Mellon University. https://doi.org/10.37044/osf.io/3a8cn_v1\

Invited talks & Conferences

- July 20-24 2025 ISMB/ECCB 2025
- June 5-6 2025 Brunel Bioinformatics Symposium 2025
  - Invited for a
- 19 June 2024 BioFAIR Roadshow Queen's University Belfast
- 26 Feb 2024 - 1 Mar 2024 Building Transparent ML/AI Solutions to Advance Biological Research Codeathon

Funding & awards

QUB-MDBS Travel Scholarship May 2025

Volunteering and Extracurricular Experience

Volunteer, Cancer Research UK, Botanic Avenue, Belfast **Apr 2023 – Sep 2024**

- Raised £2500+ through fundraising initiatives and managed inventory for a shop serving 200+ weekly customers

Member of Queen's homework club programme, mentored 12 + students from disadvantaged backgrounds in STEM subjects 2022 – 2023

Skills

Laboratory skills: DNA/RNA extraction, agarose gel electrophoresis, PCR, UV spectrophotometry, Western blot, ELISA, and mammalian/microbial cell culture
Computing skills: R, Python, Git, Docker, and Nextflow
Other certifications: Laboratory safety procedures, COSHH training, Bioinformatics, and Introduction to genomic technologies

Professional society memberships

- Associate member of the Royal Society of Biology
- Member of NC3Rs Oncology network
- Member of the Open Bioinformatics Foundation (OBF)

Interests

- Star gazer, and an advocate for open-source bioinformatics

References

Available upon request