

# JUDE POPHAM

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## EDUCATION

### IMPERIAL COLLEGE LONDON

*Bioinformatics & Theoretical Systems Biology (MRes)*

London, England

Sep 2023 – Sep 2024

- Grade: **Distinction**, Key Modules: Mathematics and Computing (Calculus, Statistics, Python), Bioinformatics (ML, DSA, Omics)
- Additional Courses: Git, C++, Docker, High Performance Computing (HPC), Accelerated Computing (Nvidia certificate), SQL

### KING'S COLLEGE LONDON

*Biochemistry (BSc)*

London, England

Sep 2020 – Jul 2023

- Grade: **First Class Honours**, Key Modules: Programming for Bioscientists (Python), Bioinformatics for Biologists (R & Unix), Statistics for Biosciences (Excel), Advanced Molecular Genetics (PCR, SnapGene), Protein Design (PyMOL, SWISS-PROT, BLAST)

## WORK EXPERIENCE

### NUCLEOME THERAPEUTICS

*Computational Biology Intern*

Oxford, England

Oct 2024 - Present

- 6-month placement at a fast-emerging BioPharma, backed by Pfizer, J&J and Merck Ventures to decode the 'dark genome' using ML

### NATIONAL INSTITUTE FOR HEALTH AND CARE RESEARCH

*Machine Learning Software Developer (Proteomics and Metabolomics)*

London, England

Mar 2024 – Sep 2024

- Developed new ML software for PathIntegrate (v1.0.0 release): a Python package for multi-omics data integration & patient stratification
- Utilised HuggingFace BERT models to develop a full stack (CSS/HTML) tool, annotating 30% more metabolites than MetaboAnalyst
- Organised an international collaboration with the University of Kentucky (USA) & currently working on a publication for PLOS Journal

### BRITISH HEART FOUNDATION

*Data Analyst (Transcriptomics and Proteomics)*

London, England

Jan 2023 – Sep 2023

- Developed R workflows for Single-Cell NGS data integration benchmarking, interpreting clinical outcomes with private proteomics data
- Implemented Nextflow for GEO data meta-analysis, DGE analysis with DESeq2 and proteomics integration with Proteomic Discoverer
- Publication co-author (doi: 10.1161/CIRCRESAHA.123.322590) & invitee for the MarketsandMarkets Single Cell-Omics Conference

### INSTITUTE OF PSYCHIATRY, PSYCHOLOGY AND NEUROSCIENCE

*Data Analyst (Genomics and Transcriptomics)*

London, England

Jun 2022 – Sep 2022

- Created a successful funding application for a project (£2500) studying alternative splicing and NMD during Neurogenesis with R/Unix
- Executed shell scripts on SRA data running FASTQC & Whippet, identifying NMD-regulated transcripts using DeltaPsi & avg\_log2FC
- Co-ran a bioinformatics workshop for 52 school students (DevNeuro Academy 2022) & selected to present results via the KURF Award

### TOUCH SURGERY

*Information Technology Intern*

London, England

Aug 2019 – Sep 2019

- Scripted in C/C++ and utilised Linux to develop intra-operative surgical devices using advanced video processing AI algorithms
- Managed and queried relational databases using MySQL and deployed VPCs on AWS for secure, scalable application support
- Integrated communication REST APIs into the app with >4 million downloads and 200+ simulations across 17 surgical procedures

## PROJECTS, POSITIONS OF RESPONSIBILITY AND/OR EXTRACURRICULAR ACTIVITIES

### SCRUM TEAM BIOINFORMATICS PROJECT

Jan 2024 – Present

- COSMx Nanostring spatial analysis of neuroblastoma tumours, utilising ROC curves to benchmark cell-type transfer learning methods
- Employed Git for collaborative development of an image-augmented graph transformer model using TensorFlow
- Presented results at King's Spatial Biology Research Conference and currently reviewing a manuscript for *Modern Pathology*

### SCIENTIFIC PUBLICATION CO-FOUNDER

Sep 2021 – Jul 2023

- Co-ordinated outreach growing a new scientific journal (KCL Biochemist's Print) across 3 editions: Winter 2021 (8 articles), Spring 2022 (11 articles) and Winter 2022 (22 articles + a collaboration organised with Kings Business Review)
- Primary author of two original scientific articles: 'Alternative Splicing and Neurogenesis' and 'Novel Plastic Degrading Enzymes'

### MEN'S LACROSSE 2's CAPTAIN

Sep 2022 – Jul 2023

- Executed and funded bookings for coaches, pitches and referees through liaison with KCLSU and other university representatives
- Played for the Men's 1<sup>st</sup> Team and inspired ~15 men's players to join the club, privately coaching 6 new players on their technique

## ADDITIONAL INTERESTS & QUALIFICATIONS

**BIOINFORMATICS SOFTWARE/PLATFORMS:** PyMOL, Tuxedo Suite, BLAST, BioMart, HPA, GALAXY, Cytoscape, SWISS-MODEL, Phyre2, AlphaFold, GEO, SRA, ArrayExpress, TCGA, Ensembl, GENCODE, Pfam

**CODING SKILLS:** LaTeX, Python (pandas, matplotlib, scanpy, sklearn, requests for REST APIs, tensorflow, streamlit), R (dplyr, ggplot, Bioconductor, seurat), BASH, pipelines (Snakemake, Nextflow), web design (CSS, HTML), databases (MySQL, SQLite)

**SAILING:** RYA Stages 1-5, RYA Dinghy Instructor Pre-assessment (passed), RYA Powerboating Licence, RYA Medical Licence

**MUSIC:** ABRSM Grade 5 (Viola), ABRSM Grade 5 (Music Theory), Tiffin Boys Choir Alumni (Tenor)

**DOFE:** Gold, Silver and Bronze Awards (combined 21 months volunteering, 6 expeditions totalling 352 km)

**LANGUAGES:** English (Native), German (B1)