Name: David Chong **Email:** chongdtwdavid94@gmail.com **Contact:** +44 7871277955

Employment History

FY1 Doctor at West Suffolk NHS Foundation Trust *Aug 2021 - Present*
As a junior doctor I am involved in the day to day management of patients including facilitating ward rounds, reviewing unwell patients and starting initial treatment, performing procedures, coordinating care from various departments for each patient, and speaking to patients and their families to educate them about their health and conditions as well as to address any concerns they might have. As part of my training I also continue to attend clinical teaching and am involved in quality improvement projects in the trust.

Visiting Researcher at GOSH - DRIVE *Jul 2021 - Present*
I am working on developing an interactive data analytics application to enable clinicians and healthcare users to explore EHR data to facilitate hypothesis generation for further study and discover relationships in EHR data.

Intern at The Francis Crick Institute *Jul 2018 - Aug 2018*
As part of the Crick-Calleva Summer Student Programme, I joined the Van Loo lab where I developed a pipeline to perform variant calling using GATK and to analyse copy number variation from Whole Genome Sequencing data from NF1 tumour samples from a single individual. I then used the copy number and variant information to construct a phylogenetic tree of tumour samples, which suggested that metastases along the nerves were seeded in a sequential manner based on proximity.

Intern at University of Cambridge Genetics Department *Jun 2017 - Jun 2018*
I joined the Prabakaran lab to develop methods to predict the function of proteins arising from non-protein coding regions, referred to as novel Open Reading Frame proteins (nORFs). I approached this problem by comparing the predicted structure of nORFs and their sequence against known proteins, as well as correlating their sources against mutation databases like TCGA, and comparing their transcriptomic profiles against known proteins profiles. To streamline this process I set-up a pipeline on the HPC that included scripting multiple tools together and setting up and configuring the EV Fold pipeline for protein structure prediction.

Intern at Genome Institute of Singapore *Jul 2016 - Aug 2016*
I joined the Prabakhar lab to explore the factors that affected the performance of a single-cell classifier that used information from bulk microarray data as a reference. The factors included various distance metrics, annotation detail, and reference database composition on the accuracy of classification.

Education

Master of Information and Computing Technology at University of Pennsylvania
Jan 2019 - Dec 2021
Overall GPA - 3.93
Electives: Fundamentals of Linear Algebra and Optimisation, Statistics for Data Science, Artificial Intelligence, Big Data Analytics

MB, BChir at University of Cambridge
Aug 2018 - Jun 2021

Bachelor of Arts (Hons) at University of Cambridge
Oct 2015 - Jun 2018
Medical and Veterinary Tripos - Part IA (First Class)
Medical and Veterinary Tripos - Part IB (Second Upper)
Medical and Veterinary Tripos - Part II Genetics (First Class)
JM Thoday Prize - Awarded for best overall academic performance in the Part II Genetics Course
Winfred Georgina Holgate Pollard Memorial Prize - Awarded for outstanding performance in Part II Tripos

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Publications

1) Erady, C., Boxall, A., Puntambekar, S. et al. **Pan-cancer analysis of transcripts encoding novel open-reading frames (nORFs) and their potential biological functions**. npj Genom. Med. 6, 4 (2021). https://doi.org/10.1038/s41525-020-00167-4

2) Chong, D., Morley, C.J. & Belteki, G. **Computational analysis of neonatal ventilator waveforms and loops**. Pediatr Res 89, 1432–1441 (2021). https://doi.org/10.1038/s41390-020-01301-9

3) Chong, D, Kayser, S, Szakmar, E, Morley, CJ, Belteki, G. **Effect of pressure rise time on ventilator parameters and gas exchange during neonatal ventilation**. Pediatric Pulmonology. 2020; 55: 1131– 1138. https://doi.org/10.1002/ppul.24724

Extra-curricular Activities

Society Positions
Cambridge MedSoc Webmaster 2016-2017
Cambridge Synthetic Biology Society Webmaster 2017-2018
Cambridge MedTech Society Technical Events Officer 2018-2019
Faculty of Clinical Informatics Associate Member (2020 - present)
Faculty of Clinical Informatics Associates Group Standing Committee Member (2021 - present)

Misc

Experience
Differential gene expression, Gene Ontology, GSEA analysis
Variant calling
Connectomics
Data analytics and machine learning (Python, R, Numpy/Pandas/sklearn/scipy)
Web Development (HTML/CSS, Javascript, SQL, PHP)
Mobile App Development (Java, Kotlin, C#)

Interests
Time series classification
Causal inference
Reinforcement learning
Neonatal Ventilation

Presentations
Presented at PyCon UK 19 "Python in Medicine: A toolkit for exploring neonatal ventilator data"
Presented at The Neonatal Society Autumn 2019 meeting.