

FERNANDO GUNTORO

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🏠 London, United Kingdom

EDUCATION

PhD in Epidemiology and Biostatistics | Imperial College London 2021-2026

- ◆ Recipient of the competitive, fully funded International PhD Scholarship from the MRC Global Infectious Disease Analysis.
- ◆ Utilized statistical and machine learning models on UK Biobank multi-omics data to identify pre-infection biomarkers for severe COVID-19 and characterize clinical complications of PASC (Long COVID).
- ◆ PhD Title: 'Unravelling Severity and Long-Term Post-Acute Sequelae of COVID-19 in the UK Biobank: A Molecular, Statistical and Machine Learning Approach.'

MRes in Biomedical Research | Imperial College London Distinction 2020-2021

- ◆ Awarded the Dean's Prize for Highest Achievement in the cohort.
- ◆ Assisted the Imperial College COVID-19 Response Team in the inference of SARS-CoV-2 epidemiological models through optimizing particle and sequential Markov Chain Monte-Carlo.
- ◆ Developed BenchmarkDR: an efficient, parallelizable pipeline for reproducible and interpretable prediction of antimicrobial resistance using a benchmark of >10 machine learning models (github.com/WGS-TB/BenchmarkDR).

MSc in Bioinformatics | University of Edinburgh Distinction 2017-2018

- ◆ Successfully implemented an adaptive tree-rearrangement algorithm for the software LVB (lvb.bio.ed.ac.uk) which uses simulated annealing heuristic to infer evolutionary relationships of bacteria and viruses.
- ◆ Dissertation title: 'Optimizing Tree-Rearrangement Algorithm for Simulated Annealing Heuristic in Phylogeny Reconstruction.'

BSc (Hons) in Virology and Immunology | University of Bristol 2:1 2014-2017

- ◆ Recipient of the Undergraduate International Scholarship for three years.
- ◆ Applied network analyses to study >10,000 proteins in a cell model of Adenovirus infection.
- ◆ Dissertation title: 'Combined Proteomic and Phosphoproteomic Analysis of A549 Cells Infected with Adenovirus and ONYX-015.'

PROFESSIONAL EXPERIENCES

Research Associate | Imperial College London 2026-Current

- ◆ Analysing the largest UK survey of COVID-19, Real-time Assessment of Community Transmission (REACT) Study, to investigate the biological, demographic, and lifestyle risk factors of Long COVID and post-acute sequelae of COVID-19 using statistical and machine-learning-based models based on multi-omics data.
- ◆ Designed lectures and tutorials for the MSc in Health Data Analytics and Machine Learning: Computational Epidemiology, Translational Data Science, and Introduction to Statistical Thinking and Data Analysis.
- ◆ Designed and led supervision of Masters dissertation projects.

Graduate Teaching Assistant | Imperial College London 2020-2025

- ◆ Designed and delivered Statistics course for the Graduate School of Teaching.
- ◆ Supported in the delivery of seminars and tutorials, as well as contributed to marking Masters dissertations and other assessments.

Bioinformatician (Research Assistant) | MRC Prion Unit at University College London 2018-2020

- ◆ Designed and executed a large case-control study of DNA methylation from 1000 human tonsillar, appendiceal, brain, and whole blood tissues to investigate its role in various neurodegenerative diseases.
- ◆ Developed and optimized the performance of regression, random-forest and neural-network models for prediction of human prion diseases based on an epigenetic profile from >750,000 DNA methylation sites.

Research Intern | University of Cambridge

2016

- ◆ Produced a high-resolution genome assembly and characterized the genetic elements of a multi-drug-resistant isolate of the zoonotic pathogen *Streptococcus suis*.

Subwarden | Linstead Hall, Imperial College London

2022-2026

- ◆ Provided pastoral care, handled emergencies, enforced discipline and regulation compliance, relating to first-year student residents.
- ◆ Ensured general wellbeing of student residents by managing hall committees, as well as actively organizing and promoting social activities.

SKILLS

Programming	Highly proficient in the use of R and python for statistical data analysis and software engineering. I am also experienced with C, and web development programming languages (html, JS, css)
Machine Learning	Skilled and knowledgeable in machine learning models and application using caret (R) and scikit-learn , pytorch and tensorflow (python). I also teach introductory machine learning modules at the postgraduate level.
Reproducible Research	Competent at using github for version control and collaborative programming, as well as Jupyter notebook and R markdown for making reproducible computational projects and teaching.
Interpersonal	Excellent teamwork , communication and organizational skills in working for large, collaborative projects. I am competitive and adept at working under pressure, as well as effective at situation-awareness and decision-making.
Administrative	Well-versed in the use of LaTeX and Microsoft Office tools for making high-quality documents and presentations. Skilled with Canva , Adobe Illustrator and Photoshop for producing high-quality, publishable figures.
Languages	I speak both English and Indonesian at Native Bilingual proficiency (C2), and Mandarin and Hokkien at Intermediate proficiency (B1).

RESEARCH PUBLICATIONS

- ◆ Pereira, G., **Guntoro, F.**, *et al.* "Education, Employment, Income, and Urban–Rural Differences as Drivers of Social Inequalities in Environmental Exposures: Evidence from the UK Biobank." *Environmental Science & Technology* (2026).
- ◆ Chia, S. B., **Guntoro, F.**, *et al.* "Respiratory viral infections awaken metastatic breast cancer cells in lungs." *Nature* 645.8080 (2025): 496-506.
- ◆ Koriath, C. A. M., **Guntoro, F.**, *et al.* "Huntington's disease phenocopy syndromes revisited: a clinical comparison and next-generation sequencing exploration." *Journal of Neurology, Neurosurgery & Psychiatry* 96.5 (2025): 466-469.
- ◆ **Guntoro, F.**, *et al.* "DNA methylation analysis of archival lymphoreticular tissues in Creutzfeldt–Jakob disease." *Acta Neuropathol* (2022).
- ◆ FitzJohn, R. G., **Guntoro, F.**, *et al.* "Reproducible parallel inference and simulation of stochastic state space models using **odin**, **dust**, and **mcstate**." *Wellcome Open Research* (2021).
- ◆ **Guntoro, F.**, *et al.* "Altered DNA methylation profiles in blood from patients with sporadic Creutzfeldt–Jakob disease." *Acta Neuropathol* (2020).
- ◆ Norsworthy, P.J., **Guntoro F.**, *et al.* "A blood miRNA signature associates with sporadic Creutzfeldt-Jakob disease diagnosis." *Nat Commun* 11, 3960 (2020).

AWARDS

MRC GIDA PhD International Scholarship
Dean's Prize for Highest Achievement
Department of Health Grant Beneficiary
Undergraduate International Scholarship

Imperial College London, 2020-2025
Imperial College London, 2021
University College London, 2018-2020
University of Bristol, 2014-2017