JACOB KNIGHT, PHD

Flat 10 Canterbury House, London, SE1 7LN
07720 607313 jacobknight345@gmail.com https://github.com/jacob-w-knight

Data Scientist, Imperial PhD & Faculty AI Fellow. Translating complex mathematical modeling into high-stakes decisions for government and industry. Specialist in Bayesian inference and Python ML pipelines.

TECHNICAL SKILLS

Tools	Python (NumPy, pandas, SciPy, scikit-learn, XGBoost, Tensorflow, Matplotlib, Seaborn), SQL, C, Bash, git, Linux
Techniques	Statistical Modeling, ML Pipelines, Bayesian Inference, Model Validation, Hyperparameter Tuning, Data Visualization, Feature Engineering, Hypothesis Testing, Performance Optimization, Data Cleaning, Exploratory Data Analysis (EDA), Parallel Computing, APIs

WORK EXPERIENCE

Consultant Data Scientist, Faculty AI Fellowship January 2026 - Present

· Developed an AI-powered stakeholder recommendation tool for a leading climate think-tank to identify optimal engagement targets

PhD: Active Systems with Hidden States October 2021 - November 2025
Non-equilibrium Systems group, Imperial College London

· Studied the physics of microscopic organisms using mathematical models and data-driven computational methods

  – Techniques included large-scale simulations, novel Bayesian inference algorithms and non-Markovian modelling

· Published four papers in leading scientific journals

UKRI Internship: DHSC Health Economics team May - August 2024

· Conducted statistical analysis on regional funding inequalities (∼£100M budget impact), leading to a briefing for the Minister for Public Health

Undergraduate Teaching and Private Tuition January 2020 - Present

· Led and organised undergraduate seminars in five courses

· Provided over 350 hours of voluntary and paid tuition in Maths, Physics and Chemistry to secondary school students

EDUCATION

Imperial College London, Department of Mathematics 2021 - 2025
PhD (Applied Mathematics): Active Systems with Hidden States

Gonville and Caius College, University of Cambridge 2016 - 2020
Natural Sciences (Physics) BA MSc, First Class Hons.
Recipient of the BP Nevill Mott Prize for the top Theoretical Physics Masters project

Haberdashers' Aske's Boys' School 2009 - 2016
A levels: Mathematics (A*), Further Mathematics (A*), Physics (A*), Chemistry (A*) 2016

INTERESTS

· Developing AI skills through side projects, including classifying songs into musical genres

· Trained as a Mindfulness Meditation teacher with Zenways before founding and leading the Imperial College Mindfulness Society (2022-2025)

REFEREES

Dr. Gunnar Pruessner
Reader in Mathematical Physics
Imperial College London
g.pruessner@imperial.ac.uk

Harry Heyburn
Economic Advisor
Department of Health and Social Care
Harry.Heyburn@dhsc.gov.uk