James C. Butler

jamesccbutler@gmail.com ·   +353 089 250 5361 ·   Ireland · Dual UK / US citizen

Bioinformatics PhD candidate & Marie Curie Fellow specializing in machine learning and generative AI for large-scale biological and healthcare data. Research experience with transformers, diffusion models, GANs, and statistical learning, with a strong foundation in applied statistics and interdisciplinary research.

Education

PhD in Computer Science / Microbiology — *Marie Curie Fellow*

University College Cork, Ireland | 2021–Present
Research on deep generative and transformer-based models for large-scale omics and biological sequence data, including GANs, diffusion models, and attention-based architectures for healthcare applications.

MSc Applied Statistics & Datamining *(Distinction)*

University of St Andrews, Scotland | 2019–2020
Dissertation: *Synthetic Data for Training Convolutional Neural Networks* (18.7 / 20)
Coursework included machine learning, medical statistics, multivariate analysis, GLMs, and statistical computing.

BA Economics & Visual and Environmental Studies

Harvard University, USA | 2011–2015
Quantitative focus including econometrics, statistical methods, and computational analysis.

Research & Professional Experience

Research Assistant

Imperial College London, UK | 2020–2021
National Institute for Health Research (Applied Research Collaboration)
- Designed and conducted statistical analyses to identify systemic issues across health and social care systems
- Evaluated interventions and outcomes using applied statistical and data-driven methods

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Statistical Consultant

DMP Statistical Solutions UK Ltd, UK | 2020–2022
- Delivered applied statistical analyses and reports for industry clients including L'Oréal
- Designed a custom data-driven web application for Raymond James

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Co-founder & Board Member

Le Grand Verre Wines, New York & Paris | 2015–2019
- Co-founded and scaled an international e-commerce business
- Led strategy, analytics-driven marketing, and fundraising
- Secured external investment and managed cross-border operations and teams

Teaching Assistant / Guest Speaker

Harvard University, USA | 2018
- Teaching assistant for Game Theory
- Guest speaker on leadership and entrepreneurship
- Editorial contributor to *The Financial Technology Revolution* (Marion Labouré)

Research Assistant

University of Pennsylvania Biomechanics Lab, USA | 2011–2012
- Contributed to published research on lung injury prevention and reactive oxygen species
- Collected and analyzed experimental data on lung and brain pathologies

Technical Skills

- **Programming:** Python, R

- **Machine Learning:** Transformers, diffusion models, GANs, representation learning

- **Statistics:** GLMs, multivariate analysis, hypothesis testing

- **Data:** Large-scale biological and healthcare datasets

- **Tools:** Linux, Git, Shiny

Languages

- Spanish — Intermediate

Interests

Endurance running (3 marathons, 3:13 PR), music, travel