

William Bolton

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Education

- Imperial College London, AI4Health PhD Researcher** 2020 – 2024
- Researched artificial intelligence clinical decision support systems for antimicrobial optimisation with a focus on ensuring clinical utility and real-world impact.
 - Investigated machine learning models for fair and interpretable individualised intravenous to oral switch decision-making - published in Nature Communications.
 - Developed an innovative pipeline using graphs to generate patient representations based on comorbidities - accepted for the AAAI Health Intelligence Workshop.
 - Studied ethical AI for antibiotic prescribing - published in Nature Machine Intelligence.
 - Built a novel recurrent autoencoder and synthetic control model to estimate patient counterfactuals under antibiotic temporality - published in Frontiers Digital Health.
 - Presented my work to >250 people at ECCMID 2023 with 8 posters accepted in 3 years.
 - Managed multiple masters students projects and acted as an academic reviewer.
- University of Cambridge, MPhil Bioscience Enterprise (70%)** 2018 – 2019
- Studied technology, commercialisation and entrepreneurship in the healthcare sector.
- Imperial College London, BSc Biochemistry, 1st (74%, Top 10% of my year)** 2015 – 2018
- Focused on synthetic biology, biotechnology, bioinformatics and network engineering.
- Ipswich School, A levels, Chemistry A*, Biology A*, Maths A, Physics A (AS)** 2015

Professional Experience

- AI/ML Engineer (Internship), GSK.ai** 2023
- Worked in the Responsible AI team to explore the intricacies of ensuring safety and understanding hallucinations in large language models.
 - Developed a repository for evaluating long form responses from large language models, enhancing my software engineering and code reviewing skills.
 - Learnt fast, adapting to a new area of AI, organisational culture and ways of working.
 - Took ownership of the project and steered its direction, articulating and supporting my viewpoint in meetings, working independently while adjusting to feedback.
 - Published a paper in ICLR 2024 Reliable and Responsible Foundation Models Workshop.
- Fellow & Venture scientist, EWOR & Conception X** 2023
- Selected for highly competitive entrepreneurial courses and accelerators.
 - Used design thinking and customer focused methods to identify problems and solutions.
- Healthcare analyst, CBPartners** 2019 – 2020
- Leveraged data science, analytical, problem-solving and teamwork skills to address commercial and business issues with a focus on pricing and access of pharmaceuticals.
 - Developed a model for predicting drug price erosion during indication expansion.
- Entrepreneur, QBio** 2019
- Worked on a diagnostic and machine learning tool to stratify sepsis patients.
 - Saw success with prestigious institutions including Cambridge Judge Business School, Accelerate Babraham, Santander Universities, and Cambridge University Entrepreneurs.
- Business Development, Cambridge Cancer Genomics** 2019
- Evaluated strategic opportunities to bring a AI precision oncology diagnostic to market.

Skills

Artificial Intelligence

NN, RNN, Autoencoder, LLM, Graphs, Fairness, Interpretability, Safety

Code

Python, PyTorch, Django, Pydantic, Hydra, Git, Huggingface, SQL, JS, HTML, CSS, React