

Louis Henry Fisher

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Education

2018-2019 Imperial College London (MSc Health Data Analytics & Machine Learning)

- Merit
- *Introduction to Statistical Thinking and Data Analytics (80%), Clinical Data Management (74%), Principles and Methodologies of Epidemiology (72%), Machine Learning (83%), Computational Epidemiology (74%), Translational Data Science (65%).*

2015-2018 Imperial College London (BSc in Biomedical Science)

- First Class Honours
- *Applied Cellular & Molecular Biomedical Science (74%), Global Burden of Disease (79%), Science Skills for Biomedical Science (76%), Cardiovascular Science (77%), Computational Medicine (89%).*

Work Experience

2019-2020 Entrepreneur First (Cohort Member)

- Entrepreneur First is the world's leading talent investor, investing in the most talented and ambitious individuals to help them find a co-founder, develop an idea, and start a company.
- Led technical development of multi-omics approaches to drug discovery for cancer relapse patients.

2020-2021 CrowdPeer

- Co-founder. A platform for the open peer review of biomedical preprints with upvoting and reviewer recognition systems.

2020-Current Bennett Institute for Applied Data Science, University of Oxford

- Health Data Scientist working on the development of the OpenSAFELY for EHR analysis and its use for research on NHS service analytics in response to the COVID-19 pandemic, producing multiple peer-reviewed manuscripts.
- Involved with the development of OpenSAFELY tools including [OpenSAFELY Reports](#) and [OpenSAFELY Interactive](#).
- Provide programming teaching and support to external users of the OpenSAFELY platform through a co-piloting programme.
- Lead the development of the OpenSAFELY output checking programme to ensure non-disclosive research outputs.

Technical Skills

- Python (Pandas, NumPy, Scikit-learn, Flask, Pytest, PyTorch, Keras)
- Other programming languages: R, Javascript, SQL.
- Other programming skills: Git, jupyter notebooks, unit testing.
- Statistics: Probability, significance testing, linear and logistic regression, missing data and model building.
- Machine learning: Supervised learning methods (regularised regression, SVM, random forests, neural networks), unsupervised learning methods (PCA, hierarchical clustering, GANs), deep learning (convolutional neural networks, autoencoders).

Projects

2019-2020

- Automated quality assessment of echocardiography sequences using deep learning.

2018-2019 MSc Health Data Analytics and Machine Learning

- **Thesis:** Generation of synthetic cardiac images using generative adversarial networks.
- Unsupervised clustering of opioid prescribing trends across General Practices in England. Identified General Practices that have seen a sharp rise in opioid prescribing in the last three years.
- Identifying OMICs signatures of inflammation using univariate and multivariate approaches.
- Assessing opioid overprescribing in England using statistical process control.

2017-2018 BSc Biomedical Science

- Computational Medicine Final Project: Used a convolutional neural network to make predictions of pacemaker models from chest x-ray images. Achieved >90% accuracy on test set and successfully visualised how the convolutional neural network was learning.

Achievements & Prizes

2019 ICHealthHack

- Member of the winning team for the best non-invasive diagnostic tool at ICHealthHack 2019, a hackathon at Imperial College London, focussing on health care problems and solutions. Developed an app using machine learning to analyse patient handwriting, as an early screening tool for the onset of Parkinson's disease.

2018 BSc Biomedical Science

- Dean's List, Year 3.
- Computational Medicine Prize. Best performance in specialist course.
- Waller Prize. 3rd best overall performance in the BSc across final year Biomedical Science and fourth year Medicine students.

2017 ICHealthHack

- Member of the winning team for the McKinsey & Company Data Visualisation Prize at ICHealthHack 2017. Used logistic regression to predict medical appointment no-shows.

Selected Publications

- James P Howard, **Louis Fisher**, Matthew J Shun-Shin, Daniel Keene, Ahran D Arnold et al. (2019). Cardiac Rhythm Device Identification Using Neural Networks. JACC: Clinical Electrophysiology. <https://doi.org/10.1016/j.jacep.2019.02.003>
- **Louis Fisher**, Lisa EM Hopcroft, Sarah Rodger, James Barrett, Kerry Oliver et al. (2022). Changes in English medication safety indicators throughout the COVID-19 pandemic: a federated analysis of 57 million patients' primary care records in situ using OpenSAFELY. medRxiv. <https://doi.org/10.1101/2022.05.05.22273234>. (Under peer review)
- **Louis Fisher**, Victoria Speed, Helen J Curtis, Christopher T Rentsch, Angel YS Wong et al (2022). Potentially inappropriate prescribing of DOACs to people with mechanical heart valves: A federated analysis of 57.9 million patients' primary care records in situ using OpenSAFELY. Thrombosis Research. <https://doi.org/10.1016/j.thromres.2022.01.023>
- Syed Ahmar Shah, Sinead Brophy, John Kennedy, **Louis Fisher**, Alex Walker et al. (2022). Impact of first UK COVID-19 lockdown on hospital admissions: Interrupted time series study of 32 million people. eClinicalMedicine. <https://doi.org/10.1016/j.eclinm.2022.101462>.
- Helen J Curtis, Brian MacKenna, Milan Wiedemann, **Louis Fisher**, Richard Croker et al. OpenSAFELY NHS Service Restoration Observatory 2: changes in primary care activity across six clinical areas during the COVID-19 pandemic. medRxiv 2022.06.01.22275674. <https://doi.org/10.1101/2022.06.01.22275674>. (Under peer review)
- Agnieszka Lemanska, Colm Andrews, **Louis Fisher**, Ben Butler-Cole, Amir Mehrkar et al. The impact of the COVID-19 pandemic on prescribing of pancreatic enzyme replacement therapy for people with unresectable pancreatic cancer in England. A cohort study using OpenSafely-TPP. medRxiv 2022.07.08.22277317; doi: <https://doi.org/10.1101/2022.07.08.22277317>. (Under peer review)