Dr. Megan Courtman - Research Fellow

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About

A health data scientist with interdisciplinary skills. I am interested in using technology to solve clinical problems: combining my computer science skills with my motivation to conduct beneficial research.

Interests

Machine learning, deep learning, computer vision, medical imaging, explainable AI

Education

PhD Health Data Science University of Plymouth	2020 – 2024
MSc Data Science & Business Analytics University of Plymouth	2019 – 2020
BA History University of York	2011 – 2014

Grants

NIHR Invention for Innovation (i4i) Programme *Brain Injury outcomes using Routine Data and Imaging*	2025 – 2026
MRC funding for early stage development of new healthcare interventions *Using Explainable Artificial Intelligence to predict future stroke using routine historical investigations* (MR/Y503472/1)	2024 – 2026
EPSRC DTP PhD studentship *Evaluation of novel markers of on-set of PD using machine learning and routine CT brain imaging* (EP/T518153/1)	2020 – 2024

Papers

Machine learning to predict stroke risk from routine hospital data: A systematic review - *International Journal of Medical Informatics* W Heseltine-Carp; M Courtman; D Browning; A Kasabe; M Allen; A Streeter; E Ifeachor; M James; S Mullin	2025
Deep learning classification of MRI differentiates brain changes in genetic and idiopathic Parkinson's disease - *MedRxiv* [pre-print] M Courtman; M Thurston; H Wang; S Banerjee; A Streeter; L McGavin; S Hall; L Sun; E Ifeachor; S Mullin	2024
Deep learning detection of aneurysm clips for magnetic resonance imaging safety - *Journal of Imaging Informatics in Medicine* M Courtman; D Kim; H Wit; H Wang; L Sun; E Ifeachor; S Mullin; M Thurston	2024
Protocol paper: A.I. Based STroke Risk fActor Classification and Treatment (ABSTRACT) study - *MedRxiv* [pre-print] W Heseltine-Carp; A Kasabe; M Courtman; M Allen; A Streeter; M Thurston; H Wang; L McGavin; E Ifeachor; S Mullin	2024
Opinions of the UK general public in using artificial intelligence and "opt-out models of consent in medical research" - *MedRxiv* [pre-print] W Heseltine-Carp; M Thurston; M Allen; D Browning; M Courtman; A Kasabe; E Ifeachor; S Mullin	2024

Awards

Poster prize winner - Health and Care Research Conference	2024

Three Minute Thesis winner - University of Plymouth	2023
Charles Symonds prize for top poster - Association of British Neurologists	2022

Research skills

Communication (academic and non-academic)
Writing, presenting, Patient & Public Involvement, media training, podcast/interview experience.

Programming
Python, R, SQL, Jupyter Notebooks, Git, Linux, Bash, scripting, OOP, clean code.

Data handling
Collection, linkage, analysis, visualisation and cleaning.

Machine learning
❖ Computer vision (e.g. image classification).
❖ Natural language processing (e.g. text completion and classification).
❖ Deep learning methods (e.g. CNNs and transformers).
❖ Other supervised methods (e.g. random forests and support vector machines).
❖ Explainability methods (e.g. CAMs and SHAP).
❖ Model development using feature selection and cross-validation.
❖ Model improvement using regularisation and hyperparameter optimisation.
❖ Model comparison using ROC curves and other performance metrics.
❖ Use of relevant libraries (e.g. TensorFlow, Keras, Scikit-learn, NumPy and pandas).

Roles on external bodies

Involvement Steering Group member
Parkinson's UK — 2021 – now

Professional memberships

European Stroke Organisation	2024 – now
British Institute of Radiology	2024 – now
International Parkinson and Movement Disorder Society	2022 – now

Employment history

Research Fellow
Peninsula Medical School, Faculty of Health, University of Plymouth — 2024 – now

Research Assistant (honorary contract)
University Hospitals Plymouth NHS Trust — 2021 – 2024

Film Viewer & Data Inputter
Safety Camera Unit, Devon & Cornwall Police — 2018 – 2020

Indexer with Action Management
Major Crime Unit, Hertfordshire Constabulary — 2016 – 2017

Communications Operator
Force Control Room, Hertfordshire Constabulary — 2015 – 2016

Care Worker
Bluebird Care Teignbridge — 2014 – 2015

Voluntary positions

Publicity Officer / Soprano Representative
Brent Singers — 2022 – now

Churchwarden / Electoral Roll Officer / PCC member
St. Petroc's, Harford — 2021 – now