Languages & Packages

Python
| Pandas | Numpy | PyTest | Black | PyLint | Seaborn | Matplotlib |

Python - ML & DL
| Scikit-Image | Scikit-Learn | | TensorFlow | Albumentations |

Web Development
| Django | HTML | JavaScript | | CSS |

Documentation
| Markdown | GitHub Pages | | LaTeX |

Key Software

Git

Authored over 1.2k commits, 106 PR's and 72 issues in 2025. Setup automated CI/CD, test and publishing, GitHub actions.

TensorFlow / DVC

Created multiple reproducible ML training pipelines with data version control to compare parameter / data / architecture changes.

High Performance Computing

Unix, environment creation, SLURM, and parallelisation.

Docker

Making docker files and running containers to reduce machine-to-machine variability.

Testing and Documentation

PyTest (unit, integration, system testing), Sphinx, GitHub pages.

Published Packages

- **TopoStats -** Atomic force microscopy image analysis software to quantify and characterise topographs of nanoscale biomolecules. Has 12,000+ downloads from international research groups. Winner of the 2023 Sheffield FAIR software award.
- **AFMReader** - General file loader for many atomic force microscopy file types to extract data and metadata into Python. Has 25,000+ downloads demonstrating scalable software adoption.
- **Napari-AFMReader -** A widget for the interactive BioImage viewer software "Napari" to help integrate atomic force microscopy images into the bioimage analysis community. Has 450+ downloads for recent software and is the backbone of the Napari-TopoStats software (in publication).

Education

University of Sheffield **| 2021 - 2025 |**

Doctorate of Philosophy in Computational Biophysics

University of Leeds **| 2016 - 2021 |**

Master of Physics | First Class

- Trained and evaluated a 3D-point predicting DL model was ~30% more robust to 4× object density and noise vs a mathematical model. This better mapped receptor density across a SMLM killer T-Cell image.

Personal Projects & Commitments

- **Machine Learning**. Developed deep learning segmentation and style transfer models alongside image processing scripts to design personalised cards. Currently building into an interactive Django website. Using medical imaging BioImage Zoo and DL4Mic deep learning models during workshops. Hosting my own LLM via LM Studio.
- **Web Development (Django)**. Developed a dynamic website portfolio of interactive Python projects using the Django and AJAX frameworks on a Raspberry Pi Server.
- **Completed Courses**. Adding New Knowledge to LLMs (hosted by NVIDIA). Accelerating model training using HPC resources after attending introductory HPC skills courses. Attended multiple Git and GitKracken courses. Contributing and developing microscopy deep learning resources at I2K and CBIAS workshops.
- **Teaching & Knowledge Transfer.** Taught academics a beginners deep learning workshop in collaboration with the Research Software Engineering team. Developed best use HPC and TopoStats software guides as living documents.

Referees

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