

# William Hampshire

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Physics undergraduate at the University of Sheffield, with extensive programming knowledge and a passion for data science & engineering. Keen to further develop Python & ML techniques and advancing SQL knowledge with “big data” projects, to drive well informed decision making. Equipped to deliver valuable insights in a data science role, using both physics skills and data literacy.

## Employment

June 2023 - June 2024 **Design Physicist Intern, AMETEK Land Instruments International**

- Analysed 15,000 logging scripts in Python, revealing a disparity, hinted at by experimental data. Discovered the source and presented findings, preventing future issues & increasing product reliability.
- Analysed and visualised another 10,000 logs, resulting in updates to internal parameters and pass thresholds for 5 product lines, significantly enhancing quality control.
- Developed robust serial logging Python application, essential for determining usability of an instrument before additional resources are expended, by enabling multiple simultaneous measurements.

I am proud of this opportunity to contribute to Land, world leaders in non-contact temperature measurement solutions, furthering innovation and performance, assisted by data science.

October 2022 - present **Volunteering, Student Staff Committee, University of Sheffield**

Volunteering for the Student Staff Committee, facilitating feedback from students to lecturers & faculty. Demands clear and effective communication, and good interpersonal understanding.

## Education

- 2021 - present **BSc Physics with Year in Industry, University of Sheffield, Predicted First Class**
- 2019 - 2021 **A levels, The Sixth Form College, Colchester, Physics (A) Maths (A) Electronics (A) Chemistry (A)**
- 2014 - 2019 **9 GCSEs, 1 BTEC, Maltings Academy, Average 7.6 with 9 in Physics. Dist\* in Business.**

## Technical and Personal skills

- **Programming Languages:** Python (pandas, scikit-learn, seaborn, & more), SQL, JavaScript/HTML/CSS. Also familiar with C, Matlab, VBA, React.js/Next.js
- **Industry Software:** Excel, Git, Tableau, Adobe CS/CC.
- **General Business Skills:** Presentation and documentation skills, Works productively with a team driving progress, Understanding of business models, operation and goals.

## Personal Projects

The following projects along with others are further detailed on [williamhampshire.com](http://williamhampshire.com) and on my [github page](#).

### LSTM & Dense Network Machine Learning of Motor Activity Predicting MADRS Score without Clinical Diagnosis

- Trained a neural network using recurrent LSTM and Dense layer network using tensorflow, scikit-learn
- Uses activity from an Actigraph watch, meaning there is large room for expansion in data collection

### 2024 Sheffield Local Election - data mining & visualisation

- Extracted raw html from [sheffield.gov.uk](http://sheffield.gov.uk), and created Python script to iterate through constituencies.
- Using sqlite3, executed queries within Python to create tables of data scraped, then queried the data.
- Visualised using Tableau - bubble chart showing total votes for each party, and bar chart showing the most “popular” candidates - published on [Tableau Public](#).