Thomas Aston

✉ thomas.aston@ed.ac.uk   📞 (+44) 7760 433401

🌐 thomasaston.github.io   github.com/thomasaston

in linkedin.com/in/thomas-aston-85580a19b/

About Me

Data-driven researcher and PhD candidate with strong skills in Python, machine learning, and computational modelling. Experienced in developing deep learning models, analysing complex sports biomechanics datasets, and producing actionable insights in sports and engineering domains. Presented research at international conferences and founded *xGuff*, a data storytelling platform for sports analytics. Passionate about turning data into compelling visual stories and building end-to-end pipelines for real-world applications.

Education

PhD, Engineering — *The University of Edinburgh*

09/2022 – PRESENT

- Applied deep learning to simulate brain responses to head impacts using sensor and video-derived data.
- Developed time-series models in PyTorch for biomechanical signal upsampling and prediction.
- International conference presentations: IRCOBI 2023, ISEA 2024, CNME 2024.
- Two journal papers in preparation (submission planned for summer 2025); two additional papers planned for submission by end of 2025.

MEng, Mechanical Engineering — *The University of Edinburgh*

09/2017 – 06/2022

- First Class Honours; graduated top of class.
- Recipient of the IMechE Best Student Certificate and the Frederic Barnes Waldron Prize.
- Awarded 5th Year Class Medal for highest final-year grade average.

Experience

Founder and Writer — *xGuff*

03/2025 – PRESENT

- Built a data journalism site exploring niche trends in sports data.
- Produced an automated transcript scraping and analysis pipeline in Python.
- Applied NLP techniques to quantify phrase usage in press conferences.
- Developed engaging, easy to understand data visualisations with Matplotlib and Seaborn.

Tutor and Demonstrator — *The University of Edinburgh*

09/2022 – PRESENT

- Delivered support for ~60 students per session in both Dynamics 4 and Materials 2 courses.
- Developed visual aids and custom Jupyter notebooks to enable interactive problem-solving in tutorials.
- Implemented a pipeline for analysing trends in student lab results.

Technical Lead — *Endeavour Rocketry (The University of Edinburgh)*

09/2019 – 12/2021

- Led the design and manufacture of a supersonic sounding rocket in a multidisciplinary student team.
- Supervised 10 engineering students and coordinated simulation, testing, and manufacturing workflows.
- Lead author on technical report that placed 4th at the European Rocketry Challenge.

Research Placement Student — *Universidad Carlos III de Madrid*

01/2021 – 08/2021

- Modelled the impact behaviour of cork composites using Python, computer vision, and finite element analysis.
- Contributed to research on sustainable protective materials with potential for sports and automotive applications.

Summer Research Scholarship — *The University of Edinburgh*

06/2020 – 09/2020

- Numerical modelling and characterisation of equestrian protective equipment.
- Communicated modelling results with industry, resulting in actionable insights for improving helmet design and material selection.
- Gained experience in finite element analysis, material testing, and translating technical findings for non-specialist stakeholders.

Skills

- **Languages:** Python, SQL, LaTeX, Git
- **Libraries & Tools:** MLflow, Pandas, NumPy, PyTorch, Scikit-learn, OpenCV, Seaborn, Matplotlib, Plotly
- **Simulation:** LS-Dyna, Abaqus, Ansys, custom code
- **Concepts:** Machine Learning, Deep Learning, NLP, Computer Vision, Time-Series Analysis, Finite Element Analysis
- **Other:** Technical Writing, Data Visualisation, Public Speaking

Awards

- **Chelsea FC Performance Insights Vizathon. 2025:** *Shortlisted*
- **FIFA Research Challenge, ISEA, 2024:** *Winner*
- **IMechE Best Student, University of Edinburgh. 2022:** *Winner*
- **Frederic Barnes Waldron Medal, 2022:** *Winner*
- **5th Year Class Medal, 2022:** *Winner*
- **Senior Dux Award, Lenzie Academy, 2016:** *Winner*

Additional Qualifications

- **Associate Fellow (AFHEA),** AdvanceHE
- **Deep Learning Specialization,** DeepLearning.AI
- **CS50: Introduction to Computer Science,** Harvard University (Online)
- **Edinburgh Award (Work and Volunteering Experience),** University of Edinburgh

References

Available on request.