

DR. CONOR B. HAMILL

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PROFILE

I am a data scientist at NatWest Group seeking movement in my career that will bring me further responsibility, opportunities to take greater leadership in projects, and further refinement of my technical and inter-personal skills. I bring a rich record of high-impact successes in technical and research projects, alongside a wide skillset and a strong desire to improve at every opportunity.

My consistent and significant achievements across the range of challenges I have tackled indicate I effectively apply technical solutions to meet targets and provide value, working independently or with a variety of individuals, while meeting deadlines. I attribute this to my broad abilities across programming, statistics, communication, and leadership, which are key to the success and impact I provide as a data scientist.

EXPERIENCE

Data Scientist – NatWest Group

May 2021- Present

- Undertook development of a gradient boosted tree model to estimate customer risk more accurately for pricing personal loans. Using the appropriate programming and modelling skills, I was able to rapidly present modelling results and visualise the business impact of these to stakeholders. While a senior data scientist was unavailable, I took day-to-day leadership of the data science component of this project. I ensured the project remained focussed and important tasks were prioritised, with the result that the model development remained on schedule.
- Was involved heavily in the development of a time-series model to predict balances and extract price elasticities, using an ARIMAX model. During this project I was able to bring financial domain knowledge together with modelling expertise to create a tool which is now used to price products more effectively.
- Took a leading role in developing a customer segmentation Light Gradient Boosted model (LGBM), estimated to save the business over £25 million over the next four years. Demonstrated ability to collaborate effectively between teams, write high-quality code, and take initiative to apply innovative solutions to a wide variety of problems.
 - Ensured the creation of production-quality code throughout alpha and validation phases, working collaboratively with a version control workflow.
 - Navigated and alleviated stakeholder concerns regarding unfamiliar modelling methods through detailed explanations of techniques and thorough model validation, ensuring approval and adoption of model. The model achieved a notable B risk rating with no corrections, underlining the rigour of the model validation undertaken.
 - This model has been successfully deployed, with the data science pipeline code being reused in subsequent projects.
- Led a research project on agent-based modelling for optimising credit card promotion pricing. Recognising the challenges of previous attempts to use this technique in the bank, I took the initiative to start a more research-based approach to this problem, avoiding previous issues

encountered, and formed the framework for applying this technique to simulate a credit card market. I led a team who developed and experimented with a model to simulate the outcome of credit card promotions, alongside a publication on arXiv, which has been submitted to a prestigious peer-reviewed journal.

- Contributed to a review paper of machine unlearning techniques, applying my research skills in an industrial context, which is now available on arXiv and has been cited by several other works.
- Have recently headed up a research project using large language models to create generative agents for financial simulation, establishing an operating rhythm for a team of researchers, bringing my research and leadership skills from previous projects.
- Managed an intern during their master's dissertation project. During the internship, I made sure the intern integrated smoothly with the team, set milestones for the project, held regular catchups, and guided them in decisions for their work. The project was successful, and I decided to supply a roadmap for the intern to upskill in programming, meaning their research project became a well-documented code asset, usable for future projects. I am building on this leadership experience by managing a graduate in spring 2024.
- Have consistently contributed to the data science and research communities at NatWest.
 - Led the organisation and execution of in-person and virtual poster sessions. Nearly 30 posters were presented at these events from teams across NatWest Group. These events allowed teams to share their work with others and were noted as highlights of internal conferences, of which they are now a mainstay.
 - Organised community seminars, inviting internal and external researchers to present their work. This has received consistently strong attendance, enabling the propagation of research done across the bank, with many individuals asking for their colleagues in other teams to be added to the mailing list.
 - Contributed to the data community in several other ways. This has included authorship of well-received technical blogs, contribution to an internal machine learning python package, poster presentations at two internal conferences, presenting a learning session on visualisation with python, judging contributions to internal hackathons, and sharing machine learning publications at an internal reading group.

These successful endeavours indicate the breadth of technical skills I have as a data scientist, as well as my leadership and inter-personal skills and commitment to fostering a vibrant data community.

EDUCATION

The University of Edinburgh

September 2017 - May 2021

PhD in Experimental Nuclear Astrophysics

Thesis submitted within funding period

First author publication in high-profile peer-reviewed journal (European Physics Journal A)

Queen's University, Belfast

September 2013 - June 2017

Master's in Physics

Overall score: 84%

1st Class Honours

Mentor to 1st year Physics students

TECHNICAL STRENGTHS

Programming Languages

- Python (pandas, NumPy, scikit-learn, PyTorch, matplotlib)
- C++
- SQL
- MATLAB

Other Software

- Git
- AWS
- Linux
- bash
- MS Office
- LaTeX

OTHER EXPERIENCE

Teaching Assistant - The University of Edinburgh

September 2017 – May 2021

Instructed undergraduate students in a variety of courses, including python programming and data analysis, and led honours nuclear physics tutorials of over 100 students. This gave me the opportunity to enhance my abilities to communicate appropriate technical explanations to a varied audience.

Physics and Maths Tutor

September 2015 - June 2017

Regularly tutored individuals in GCSE Mathematics and Sciences. Students had success with exam results, with every student I worked with passing and scoring at least a grade higher than predicted (taking either foundation or higher exams), and personally referring me to other parents as a tutor.