Alastair Hamilton

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SUMMARY

I am a creative, hardworking and self-driven professional with nearly a decade of experience in the data science and machine learning space, working in finance, risk, cybersecurity and sustainability. Over the past two years I have built a robust data science function from the ground up at a successful start-up but I am now looking to make a significant shift into the gaming industry and embrace a new challenge where I follow my heart and leap into the unknown, pursuing my dream in becoming a game developer.

In my spare time I enjoy playing my piano, gaming and whatever niche hobby I have at the time.

EDUCATION

University of Edinburgh   June 2017
BSc Theoretical Physics   *2:1 (69%)*

EMPLOYMENT

Altruistiq | Sustainability   *May 2022 – Present*

Lead Data Scientist → Senior Lead Data Scientist

- Started as the first data scientist within the company, charged with creating and leading the department, including all hiring, project scoping, cross-function collaboration and project implementation. Projects required a high degree of leaderhsip and creative thinking, with the mental resilience and self-drive to take risks on complex ideas.
- Worked with product managers to break down complex data science and ML project requirements into a clear backlog that could be managed in sprint cycles by non-technical managers and be prioritised against other ongoing company projects.
- Created a pipeline to automate our tagging process for incoming customer data using a custom search algorithm combining BM25 ranking, vector search, cross-encoder reranking and cluster-based reordering, where the embedding and cross-encoder models were fine-tuned SOTA LLMs hosted on GPU infrastructure. The algorithm had a top-1 accuracy of 11% and a top-30 accuracy of 34%, enabling our tagging process to become a review process, generating revenue through boosts in productivity.
- Semi-automated our PDF data extraction using a pipeline of models for clustering, grouping, multi-label multi-class classification and text extraction, with human-in-the-loop to safely deal with any corrections. The full process had a baseline KPI of ~50% accuracy and removed the need for technical engineers, saving the business ~£172,000/year.

Lloyds Banking Group | Financial Services   *Sep 2018 – May 2022*

Cognitive Data Science Manager → Data Scientist

- Required both to lead a team of data scientists and work independently, with constant collaboration with stakeholders to meet their project requirements. Excellent communication and lateral thinking skills were necessary to break down complex problems, think of creative solutions and present them back to non-technical stakeholders.
- Developed a vector-based retrieval search engine as a replacement for an FAQ Risk chatbot, avoiding ~£300k in costs.
- Developed and embedded a topic modelling tool using unsupervised LDA topic models for identifying emerging themes in customer vulnerability documents, resulting in the successful identification of OOS climate change risks.
- Developed a novelty detection algorithm using the CluStream framework as part of the bank's insider criminal threat detection project.
- Authored and supported a Data Science Masters project at the University of Edinburgh, focusing on utilising Bayesian Neural Networks for anomaly detection.

Employment *(Continued)*

BP | Oil & Gas   *Sep 2017 – Jun 2018*
Supply and Trading Market Intelligence Analyst (Graduate)

Tech Stack

Languages:	Python, SQL, Terraform, Bash
Cloud:	AWS, GCP, Azure, Sagemaker, VertexAI, Azure Machine Learning
Packages:	pandas, NumPy, scikit-learn, Transformers, PyTorch, matplotlib, nltk, LangChain
Ops:	MLflow, Weights and Biases, Github, Github Actions

Publications

Thompson, S., Teixeira-Dias, F., Paulino, M., & Hamilton, A.   *2022*
Predictions on multi-class terminal ballistics datasets using conditional Generative
Adversarial Networks.
Neural Networks, 154, 425-440.

Thompson, S., Teixeira-Dias, F., Paulino, M., & Hamilton, A.   *2022*
Ballistic response of armour plates using Generative Adversarial Networks.
Defence Technology, 18(9), 1513-1522.