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 successfully built a robust data science function from the ground up at a successful start-up but 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.

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

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

- 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.
- Coded all models, MLOps, DevOps, infrastructure and internal tooling for my team. This includes our MLOps architecture for model versioning, model release, data versioning, data pipelining, and model monitoring.
- 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.

Lloyds Banking Group | Financial Services *Sep 2018 – May 2022*
Cognitive Data Science Manager → Data Scientist

- 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)

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.