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Matthew Docherty

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EXPERIENCE

Data Scientist, *Oldbaum Services Ltd - Stirling, UK* Jun 2023 - Present

Data Analyst, *Trespass - Glasgow, UK* Jan 2023 - Jun 2023

- Sole Data Analyst reporting directly to Head of Ecommerce and Executive Directors.
- Communicated with Stakeholders via technical reports and BI dashboards using advanced SQL queries on large databases.
- Lead company-wide overhaul of daily pricing from manual CSV-based process to automated Python workflow using PySpark.
- Reconciled £200K+ of sales using advanced Excel/VBA functions on 3 years of archival order exports.
- Lead analytics and forecasting for international expansion across multiple continents transitioning from UA to GA4.
- Streamlined £30K+ targeted email marketing campaign using Python NLP-based competitor sentiment analysis.
- Developed fully-tested Python automation pipelines capable of collating accurate daily sales figures on weekends for the first time in company's history.

NLP Research Intern, *ASOS.com - London, UK* Jan 2022 - Sep 2022

- PhD intern working in a large team of ML Scientists reporting to Lead Conversational AI Scientist.
- Designed transformer-based LLM architectures for recommender systems, fine-tuned on live customer interactions which outperformed ASOS benchmarks on internal KPIs.
- Gained commercial experience in MLOps for successful SDLC and deploying models at scale.

ML PhD Researcher, *University College London - London, UK* Oct 2021 - Nov 2022

- Research Topic: Bayesian model comparison and deep generative modelling for Big Data Cosmology.
- Deployed normalising flow models on remote HPC GPU clusters trained using large datasets.
- Presented results in peer-reviewed journals and international deep learning conferences.
- Developed DevOps best practices maintaining **harmonic** source code (20+ Stars on GitHub) and publishing releases to PyPI.
- Taught graduate-level ML and Python courses before leaving academia to gain commercial experience.

EDUCATION

MSci Physics with Astrophysics (1st Class), *University of Glasgow* Sep 2016 - Jun 2021

- **Awards:** Masters Thesis Prize (2021), Undergraduate Astronomy Prize (2018), Best Astronomy Lab Student (2017).
- **Scholarships:** RISE Germany (2020), Carnegie Trust (2020), Royal Astronomical Society (2019).

TECHNICAL SKILLS

- **DevOps** - CI/CD (*Travis, CircleCI*), Version Control (*Git, DVC*), Containers (*Docker, Kubernetes*), HPC (*Slurm, CUDA*), Cloud Computing (*AWS, Azure*), API (*REST, SOAP, GCS*), Debugging, Logging, Unit Testing.
- **Data** - SQL (*MySQL, MariaDB, SQL Server, EAV Tables, JSON*), MS Excel (*VBA, Power Query*), ETL (*PCA, Feature Selection*).
- **Visualisation** - Looker Studio, Power BI, Tableau, MS PowerPoint.
- **Scripting** - Windows PowerShell, Linux, Bash Shell Scripting, MATLAB, HTML.
- **Python** - Data (*Pandas, PySpark*), ML (*TensorFlow, Scikit-Learn, PyTorch, JAX*), NLP (*NLTK, SpaCy, Gensim*), Visualisation (*Matplotlib, Seaborn, Plotly*), Web-Apps (*Django, Dash, FastAPI, Streamlit*).

SELECTED PUBLICATIONS

- M. A. Price, M. Mars, **M. M. Docherty**, et al. "Fast emulation of anisotropies induced in the CMB by cosmic strings." (2023).
- A. S. Mancini, **M. M. Docherty**, M. A. Price, and J. D. McEwen. "Bayesian model comparison for simulation-based inference." (2022).
- J. D. McEwen, C. G. Wallis, M. A. Price, and **M. M. Docherty**. "Machine learning assisted Bayesian model comparison." (2021).