Andrew Parry

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EDUCATION

University of Glasgow　　　　　　　　　　　　　　　　　　　　　　　Glasgow, Scotland
PhD in Computer Science - Full scholarship; Research in Adversarial and Efficient Neural Network Training　　*Oct 2022 - 2025*

University of Glasgow　　　　　　　　　　　　　　　　　　　　　　　Glasgow, Scotland
Bsc (Hons) in Computer Science with specialization in Data Management; 1st Class Honours　　*Sept 2018 - May 2022*
Courses: Artificial Intelligence, Machine Learning, Deep Learning, Big Data, Text as Data, Information Retrieval, Functional Programming, Algorithmics

SKILLS SUMMARY

- **Languages**: Python, C++, R, Q, SQL, Java, C
- **Tools**: Tensorflow, Pytorch, Spark (Java & Python), Kubernetes, Docker, GIT, Azure ML, DevOps and Data Pipelines, Postgre, Power BI

EXPERIENCE

University of Glasgow　　　　　　　　　　　　　　　　　　　　　　　Glasgow, Scotland
Research Assistant　　　　　　　　　　　　　　　　　　　　　　　　　*May 2022 - Sept 2022*
- ○ **Produced Novel Architecture with Real Applications**: Using neighbourhood sampling to generalize to populations in multiple modalities when training with low information. Specifically utilising concepts from local robustness and the generalization power of ensemble networks.
- ○ **Empirically Tested New Preprocessing Method**: Investigated multiple methods with empirical testing of parameters. Applied proper software development practises to create a scale-able reusable codebase.
- ○ **Verified Masters Thesis Results**: Verified baseline results and took steps to optimize previous codebase to better scale to both larger models and datasets using Tensorflow probability.

Waterstons Consulting　　　　　　　　　　　　　　　　　　　　　　　Durham, England
Data Analytics Intern　　　　　　　　　　　　　　　　　　　　　　　*May 2021 - August 2021*
- ○ **Delivered Production Ready Image Classification Model**: Handled full development of a production ready model and inferface with a client representing a large logistics company. Created a high performing image classification model and deployed it with a REST API to be integrated into a larger software suite. Feedback from my client was excellent.
- ○ **Delivered HR Dashboards for Senior Management**: Created dashboards delivering KPIs and graphs for HR tasks and goals integrated with a HR database to reduce workload updating senior management.
- ○ **Modernised Assessment Process for Software Bidding within the Company**: Created a digital form and associated dashboard to quickly assess the opinions of multiple stakeholders in a software bidding process to replace previous manual methods.
- ○ **Provided On-site Training During Client Merger**: Helped with digital transition during the merger of two clients, provided I.T and database training across the full hierarchy of employees.

Digital Skills Scotland　　　　　　　　　　　　　　　　　　　　　　Glasgow, Scotland
Teaching Assistant, Graphic Designer　　　　　　　　　　　　　　　　　*June 2015 - Sept 2021*
- ○ **Designed Graphics for Online Learning**: Created banners for lessons catching the attention of Edinburgh University with whom I created a banner for a talk and workshop at their science festival.
- ○ **Provided Learning Materials for SQA National 5 Computing Course**: Provided a mock brand logo and web assets to be used in the National 5 Computing Web Design component of teaching.
- ○ **Assisted Teaching in Disadvantaged Areas of Glasgow**: Worked with children and young adults to help them develop an interest in both programming and wider technology such as hardware including Arduino and Raspberry Pi computers.

SELECTED ACADEMIC PROJECTS

- **Efficient Training & Pre-processing (Stochastic Processes / Machine Learning)**: Investigating sample importance to find highly representative subsets of datasets in Neural Ranking utilising both stochastic and un-supervised methods to improve model performance in Dense Re-Ranking tasks. (Nov '22)
- **Deep Learning with Aggregate Level Uncertainties (Machine Learning)**: Using an encoder and ensemble of decoders with instance sampling from aggregations, I investigated ways to reconstruct a dataset from a subset to allow deep learning inference in low information applications across multiple modes of data. This work has lead onto my PhD investigating sampling for efficiency and robustness in machine learning. (Jun '22)
- **Augmented Language Model Training (Machine Learning)**: Using SotA models including BERT and GPT variations, I investigated a novel text preprocessing technique to improve model performance in code translation by adding relevant docstrings to the ground truth string used in training chosen via a weak relevance signal. I observed a significant improvement in measured performance. (Feb '22)