Tyler Liddell

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Recent MSci Computer Science graduate with expertise in machine learning, data analysis, and natural language processing. Proven track record of developing high-performance ML models and extracting insights from complex datasets, seeking to apply technical skills in AI/ML or data science roles.

Education

City University of London, UK (2020 – 2024)
MSci Computer Science: Average: 69 (Second Class Honours)

Relevant Modules: Data Structures, Algorithms, Object Oriented Programming, Functional Programming, Databases, Deep Learning, Machine Learning, Computer Vision, Natural Language Processing

Research Experience:

- Evaluated and fine-tuned large language models (LLMs) including LLaMA-2, MPT, and Mistral using benchmark datasets (MMLU, TruthfulQA, GSM8K), improving model accuracy and understanding of transformer architectures.
- Implemented advanced techniques such as transfer learning, prompt engineering, and few-shot learning to enhance performance of NLP models.

Technical Skills

Languages: Python, Java, C++, SQL, Haskell, JavaScript, PHP, HTML/CSS
Libraries/Frameworks: PyTorch, Hugging Face, Transformers, NLTK, spaCy, React, Flask, Pandas, NumPy, scikit-learn
Tools: Git, Linux, SLURM, Bash, XCode, Visual Studio, MATLAB
Concepts: Transfer Learning, Prompt Engineering, NLP, Feature Engineering, Model Evaluation, Full-Stack Development, CI/CD

Projects

Word order in LLMs (Master's Dissertation)

- Investigated LLM comprehension of language structure using controlled word-order perturbation techniques.
- Designed custom NLP experiments to test semantic reliance vs keyword association in model outputs.
- Contributed insights to limitations of current benchmarks and LLM robustness.

SMS Spam Detection

- Built spam classification models using NLP and CBOW embeddings; achieved 98% accuracy on unseen test data.
- Implemented full ML pipeline: data preprocessing, feature extraction (TF-IDF), model training, and evaluation.
- Tools: Python, scikit-learn, NLTK.

Emotion Analysis

- Performed multi-label emotion classification using MATLAB, decision trees, and random forests.
- Designed end-to-end pipeline including preprocessing, TF-IDF vectorization, and model evaluation.

Higgs Boson Detection

- Developed ML models for particle classification from CERN's ATLAS experiment data using scikit-learn.
- Improved model accuracy via hyperparameter tuning and cross-validation.
- Tools: Python, Pandas, NumPy.

Pach.ai Carbon Score App

- Built a full-stack React Native app to calculate carbon emissions from bank transactions.
- Integrated external APIs and implemented backend functionality using Flask.
- Demonstrated environmentally focused software design and cross-functional collaboration.

Work Experience

Starbucks (2016 – 2024)

- Led end-of-day operations, supervised team members, and maintained store standards in a fast-paced retail environment.
- Developed strong interpersonal, leadership, and multitasking skills while balancing full-time university study.