Tyler Liddell

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EDUCATION

City University of London, UK (2020 – 2024)

MSci Computer Science: currently in year 4 out of 4 years | Average: 71 (first class) ≈ 3.9 GPA

- **Topics covered:** Data structures, algorithms, OOP, functional programming, databases, deep learning, machine learning, computer vision and natural language processing (NLP).
- **Research:** During my time at City University, I have cultivated a strong interest in Natural Language Processing (NLP) and Language Models. Through independent research, I have gained hands-on experience evaluating and fine-tuning open-source large language models like Llama-2, Mpt, and Mistral on various NLP tasks. I have explored advanced techniques such as transfer learning, prompt engineering, and few-shot learning for efficient model adaptation. Additionally, I have implemented benchmarking pipelines using Python libraries like Hugging Face and Pytorch to measure model performance across datasets. My research in this domain has allowed me to develop strong technical skills in language modeling and a deep understanding of state-of-the-art NLP methods.

Sacramento City College, California, USA (2019 – 2020)

One year at community college (GPA: 3.8)

- Completed 1 year of studies, enhancing Mathematics abilities, and receiving an introduction to C++.

TECHNICAL SKILLS

- **Languages:** Strong in Python, Java, C++, SQL Proficient in Haskell, HTML/CSS, JavaScript, PHP
- **Tools:** GitHub, XCode, Linux, SLURM, Bash Scripting, Visual Studio, MATLAB
- **Libraries/Frameworks:** Pytorch, NLTK, Spacy, Transformers, React, Flask, Pandas

SOFTWARE DEVELOPMENT PROJECTS

- **Flight Tracker:** I find planes, radar, and flight patterns intriguing. I built this app using the OpenSky API, Flask, and React. Allows the user to see active flights on a map and check their destination, as well as search for flights. I work on this web app during my free time and continue to add new features.
- **Pach.ai app:** This app was created with a small group using React Native, which made it compatible with any platform. Utilizing a REST API and a third-party service for scraping bank transactions, Pach.ai was able to successfully calculate a personal carbon-emission score based on a user's spending habits.
- **Jon-Mick Game:** Developed a 2D platform game using Java and a game development library. Implemented game mechanics, level design, and character controls. Applied object-oriented programming principles and software engineering best practices.

RESEARCH PROJECTS

- **SMS spam detection:** Developed and evaluated multiple machine learning models using Continuous Bag-of-Words (CBOW) and other NLP techniques to accurately classify SMS texts as spam or legitimate. Implemented data preprocessing, feature extraction, and model training pipelines. Achieved 98% accuracy on holdout test set.
- **Emotion analysis:** Performed fine-grained emotion classification on a dataset containing 5 emotions (anger, joy, etc.) using MATLAB. Developed and evaluated machine learning models to identify nuanced emotional states from text data, building upon techniques from sentiment analysis. Implemented data preprocessing, feature engineering, and model training pipelines. Explored various algorithms and architectures such as TF-IDF, decision trees, and random forests.

WORK

Starbucks (2016 – Current)

- Embracing the role at Starbucks has been transformative for my soft skills. I've honed my communication abilities to a high standard, thriving in interactions with customers. Juggling work alongside my studies has been demanding yet rewarding, notably refining my time management skills.

Interests/Hobbies: Ultra-trail running, guitar, music, my dog, astronomy, and space travel.