

Harvey South

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Location: Manchester

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Citizenship: USA, UK

Education

The University of Manchester Manchester, England
MSc Advanced Computer Science: Artificial Intelligence Sep 2023 – Sep 2024
Mentors: Gavin Brown, Sandra Sampaio. *Predicted Grade: Distinction*

The University of Manchester Manchester, England
BSc Computer Science with Industrial Experience Sep 2019 – July 2023
Mentors: Mary McGee-Wood, Nhung Nguyen. *Grade: First Class*

Related experience

Diversity Enforcement in Ensemble Models
Mentor: Gavin Brown (University of Manchester) Jan 2024 – Present
Using a new unified theory of ensemble diversity to enforce diversity in model training, and explore previous literature attributing ensemble success to diversity without an exact measure of this diversity.

Analysing Mutational Pathways of Skin in Cancerous Patients
Mentors: Paolo Fortina, A.P South (Jefferson University) Jun 2023 – Present
Pipe-lining sequencing data through multiple analysis software to understand the mutational pathways of non-cancerous skin samples from cancerous patients. Results add bioinformatical support to research hypothesis.

Attributing Extremes in Weather
Mentors: Edward Pope, Nathan Creaser (Met Office) Dec 2022 – Jun 2023
Correlating between open source climate indices and ERA5 weather to investigate if a climate index can explain an extreme in weather. Unofficial assistance toward the Climate Science for Service Partnership between the UK and China.

Authorship Attribution Applied to Music
Mentor: R Batista-Navarro (University of Manchester) Mar 2022 – May 2022
Using literature on successful Authorship Attribution applications to explore potential for attributing lyrics to artists and song similarity.

LSTM Architecture Variants for Named Entity Recognition (NER)
Mentor: Nhung Nguyen (University of Manchester) Sep 2021 – May 2022
Investigating LSTM variants in the NER Literature to analyze the impact on model performance. Variants include embedding methodology, conditional random fields, or LSTM hyperparameters.

Industry experience

Thomas Jefferson University, Sidney Kimmel Cancer Center Philadelphia
Research Assistant Jul 2023 - Oct 2023
Giving research support through the creation of bioinformatical pipelines for genomic analysis, choosing appropriate data models for results presentations, and cataloging data for cloud and edge readiness.

The Met Office, Informatics Lab Exeter, England
Data Science Champion Jul 2022 - Jun 2023
Supporting weather and climate scientists through discussions, presentations, tutorials, and walkthrough projects, as well as contributing to AI knowledge in the organisation.

Talks

On The Usage and Challenges of Big Data with ML Pipelines May 2023
Data Science Community of Practice, Met Office.

Skills

Programming

Proficient with Python, Java, LaTeX, Bash, SQL, HTML/CSS, SPARQL
Knowledgeable in a breadth of languages across multiple paradigms: JavaScript, C/Cpp, PHP, ARM Assembly, Solidity, Haskell, Prolog, R, Matlab, Julia, etc.

Scientific Technology

Confidence with a wide range of AI relevant technologies: PyTorch, TensorFlow, Numpy, Pandas, SciPy, Jupyter, Colab, Dask, Xarray, SpaCY, NLTK, Ray, OpenCV, Optuna, Model cards.

Research Infrastructure

Developed with multiple different forms of scientific infrastructure, on cloud with AWS and Azure, on HPC with SLURM, GPU programming with CUDA, and on local compute.

Industry Best Practices

Various experiences in supporting research efforts prompt ability in clean, efficient, and well documented code, as well as expertise in scientific communication through technical and visual presentation/discussion.

Relevant Educational Themes

Advanced Distributed Systems, Artificial Intelligence, Data on the Web, Understanding of Complex Data, Deep Learning, Math and Statistics.

Awards

First Class Honours BSci (2023), AP Scholar with Distinction (2019), 99th Percentile Math SAT (2018), School Sports Champion (2013)

Other interests

Ultimate Frisbee, Spanish/Mandarin/Japanese, Open Science, Saxophone.