

Evan Harwin

+44 (0)75 46617322 evanharwin@gmail.com Wheelwright House, Halland, BN86PN

Profile

I am a mathematically-oriented Data Scientist currently applying myself to a diverse range of problems available to me at Mott MacDonald, working on large datasets and directly with clients.

I tend to be most interested in mathematical and statistical problem solving where it can be applied to problems in scientific and engineering domains to maximise positive social outcomes. I thoroughly enjoy researching and developing novel solutions to problems in technical fields.

Skills

I am competent and experienced with the Python scientific stack. I regularly use TensorFlow, Scikit Learn statsmodels and XGBoost to train models, calculate SHAP values for interpretability, utilise Pandas, Dask and Numpy for data manipulation, and SciPy for more complex feature engineering and signal processing.

I am well versed in enterprise cloud development, primarily on Azure. I am used to planning systems using the available resources, designing robust big-data pipelines for batch compute and responsive serverless functions to serve live machine learning models. I also regularly work with T-SQL and PostGres databases in order to serve data to API endpoints and machine learning models

My academic background is in graph theory and topology, and I find the ideas of networks and state spaces to be very applicable to real world problems.

Experience

MOTT MACDONALD, INFRASTRUCTURE CONSULTANCY, DATA SCIENTIST

June 2019 - September 2019, September 2020 - Present

Auckland Canal Levels - Currently, I am working on my own to build and deploy a forecasting algorithm that will predict the next few hours of data from canal level gauges around Auckland. This utilises just the local precipitation monitoring data in order to minimise the requirements to train and deploy this in other locations. It aims to estimate the complex relationship between the precipitation and level gauges with lots of statistical features, for example the decay rate (or half-life) of spikes in the level data, and properties of the cross-correlation functions.

Bangkok Traffic Workshop - I worked with my line manager as consulting data scientists to give a series of workshops (and a how-to guide) to employees of the authorities in Bangkok on carrying out a data science project. All the way through exploratory data analysis, feature engineering, model development

to deployment, scaling and quality assurance were detailed through the means of an example project in which we took detailed traffic events and built a model to predict times of poor service.

Water Resources South England - I worked directly with the client and project management team to develop a robust system to store, version and surface a significant amount of confidential data for a large project. This taught me a lot in terms of client relations, dealing with situations that are political and complex as well as delivering technical updates and making significant contributions in discussion with a team of senior figures and stakeholders.

Too Critical To Fail - Working with a peer and a domain expert, we developed a system for prototyping layouts and testing robustness of wastewater treatment plants by modelling them with a network architecture and applying a stochastic process on the resulting graph representation. This gave insight on systematic weaknesses within the process, maximum overall capacities, and knowledge on where overflows would propagate.

Train Junction - I developed and presented a solution to a client for assessing schedules of trains through Crewe South Junction, using a Monte Carlo simulation to provide a distribution of times and evaluate existing schedules against this.

KORDIO, PHONE REPAIR STARTUP, REPAIR TECHNICIAN

March 2016 - September 2017

In this role I managed a large amount of the customer phone repairs that came through the business whilst I was in the shop. This gave me experience working with technical parts and electronics hardware. I learnt a lot about diagnosing problems and troubleshooting. This also gave me a lot of practice handling precise and physically delicate components.

Notably this was also within the company's first year of operation and due to the fact I was one of only four employees at the time I gained an insight into the running of the business and I was invited and able to offer my input into this.

STUDIO GOBO, GAMES STUDIO, INTERN GAME DEVELOPER

August 2017

During my time at Studio Gobo I worked with a partner on a game written in C# and presented it at the company's weekly indie game project review. This taught me about working within a larger software company. I really enjoyed scripting the games physics, using the mechanical models being taught in my A Levels at the time.

Education

UNIVERSITY OF SOUTHAMPTON

September 2017 - June 2020

G100 BSc Mathematics First Class Honours

UCKFIELD COMMUNITY TECHNOLOGY COLLEGE (A LEVEL)

September 2015 - June 2017

AQA Mathematics	A
AQA Physics	A
OCR Computing	B

UCKFIELD COMMUNITY TECHNOLOGY COLLEGE (GCSE)

September 2015 - June 2017

OCR Computing	A*
Edexcel Mathematics	A
AQA Further Mathematics	A
AQA Physics	A
AQA Chemistry	A
AQA Biology	A
Cambridge English Language	A
Edexcel Economics	B
AQA English Literature	B
AQA Religious Studies	B
Edexcel Music	C

References

NICK WRIGHT - TUTOR (UNIVERSITY OF SOUTHAMPTON)

wright@soton.ac.uk

+44 (0)23 80595128

Contact Me

evanharwin@gmail.com

+44 (0)75 46617322