Jack Tattersall

Senior Data Scientist

Senior Data Scientist working in the public/social good sectors. With exceptional technical skills and more than five years' professional experience, I specialise in machine learning, innovation, leadership, stakeholder engagement, and building world-class teams to deliver high-impact results

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📍 London, United Kingdom

SKILLS

R Python Keras

Tensorflow NLP

SQL CSS

Anomaly detection

Network analysis

Forecasting

Tree-based models

Clustering

Inferential statistics

AWS Azure

Leadership

Stakeholder engagement

Data visualisation

Explainable machine learning

WORK EXPERIENCE

Deputy Head of Data Science
Department for Education (UK)

03/2019 - Present

Achievements/Tasks

- **Led a 15-person** multidisciplinary team to deliver a real-time monitoring system based on **multilevel statistical modelling**, allowing for the safe return of **more than 1 million children** to school in summer 2020, with no subsequent increase in Covid-19 infection rates
- Developed an **explainable neural network autoencoder** model with Keras in R to **detect exam fraud**, projected to halve manual workload and **increase detection rates by 20%**
- Enabled policymakers across the education sector to develop effective plans for winter 2020 using **simulation modelling** to explore plausible worst-case scenarios for pupil infections, absence rates and workforce shortages; delivered live to end users via an **R Shiny app** deployed via **Azure DevOps** & updated in real-time
- Led a cross-government team using the randomforest and igraph packages to build a machine learning model leveraging **complex network features** to detect fraudulent company registrations, with a final model **sensitivity of 95% and specificity of 99.5%**

Senior Data Scientist
Department for Education (UK)

01/2018 - 03/2019

Achievements/Tasks

- Developed **gradient-boosted tree-based** models to forecast schools' exam performance with an **AUC score of 90%**, enabling effective & proactive targeting of school support
- Empowered more than **450 DfE analysts** to achieve intermediate R skills by designing and delivering a gamified, bespoke online training course, for which I received the DfE Learning & Development Excellence Award
- Delivered talks at national conferences on **ethical and explainable** AI; pioneered the usage of techniques such as SHAP values and activation masks for projects across government

Higher Statistical Officer
Ministry of Justice (UK)

01/2017 - 01/2018

Achievements/Tasks

- Delivered an **AWS-based** system to track levels of **violence in prisons**; identified a 50% spike in specific regions and triggered swifter policy responses than previously possible
- Improved match rates for the police.uk crime mapping back-end **from ~60% to more than 85%** using probabilistic fuzzy-matching techniques 🔗

Senior Data Analyst
National Foundation for Educational Research

06/2015 - 01/2017

England's leading independent provider of education research and insights

EDUCATION

MSc Data Science: Distinction
Oxford Brookes University

09/2017 - 06/2019

BA Psychology, Politics & Sociology: First Class degree
University of Cambridge

09/2011 - 06/2014