

Nicola Fox

Criminology PhD candidate, Data Scientist & IT Business Analyst, with a Data Science MSc, Computing BSc, & 20 years experience in the IT industry. MSc project utilised natural language processing (NLP) with machine learning in Python.

[LinkedIn](#)
[Website](#)

EXPERIENCE

Equal Experts, Manchester – Associate (Contract)

Dec 2020 – Aug 2021 (Contract)

I designed and built NLP machine learning models, web applications, APIs, and human-in-the-loop processes, for a “big data” project within a large UK government department. Role: a hybrid of business analysis, IT architecture, data science and software development. Tools include Python, R, and AWS.

HACE, Manchester – Data Scientist

Oct 2020 – Dec 2020

I volunteered my skills and time to work with team members across the globe on child labour data. During this time, I designed and built a database, cleaned and transformed data, created data visualisations, and created a tool for Social Scientists to automate keyword searches on multiple PDFs. Tools and techniques included natural language processing (NLP), python, SQL, and AWS.

Manchester Metropolitan University, Manchester – Data Science MSc

Sep 2019 – Oct 2020

I took 12 months off work to complete a Data Science MSc. This course included data visualisation and machine learning using Python, SQL, Spark, Hadoop, Tensorflow and Keras. My dissertation involved researching natural language processing (NLP) techniques to detect hate speech against women and immigrants on Twitter, in English and Spanish. My Spanish model outperformed models published by previous researchers on the same dataset.

Equal Experts, Manchester – Associate (Contract)

Jul 2020 – Aug 2020

A 5 week contract to work with data engineers to build a

SKILLS

Data analysis and visualisation with Python, SQL, Spark, R and Excel.

Machine learning with Python.

Natural Language Processing (NLP).

Deep neural networks.

Business analysis.

SIDE PROJECTS & OUTSIDE-OF-WORK ACHIEVEMENTS

Velo Sister - I built and ran an online store, selling products that I designed, to raise money for charities

Ironman - I completed the Outlaw ironman triathlon

Membership Secretary - I increased the number of women club members (from 13% to 18%) as part of a focus to address diversity during my year

proof-of-concept entity-matching data product for a large online retail organisation. Our product and associated data analysis gained the support of senior management and secured funding for the development of a production-ready system.

RBS, Manchester – Data Analyst (Contract)

Feb 2019 - Jul 2019

I supported the Contract Management team by providing data analysis. This included pulling data from various sources (both internal & external) in Excel and providing visual insights to the team, who used the information to work with suppliers to reduce costs. I also worked with a developer to migrate data captured in Excel files to a SQL database with a web front end, to improve data quality & reduce the risk of human error. I also helped to expand the Excel skills of the team by providing one-to-one demonstrations of Excel's capabilities.

Victrex, Blackpool – Business Analyst (Contract)

May 2018 - Dec 2018

Provided Business Analysis services, including a review and re-design of an end-to-end manufacturing process, working with internal & external stakeholders in the UK and abroad.

Equal Experts, Manchester – Associate (Contract)

Oct 2016 - May 2018

Working as a consultant for Equal Experts on a "big data" transformation project for their public sector client, I worked as part of an "agile" team to migrate data from a legacy system to a new system exploiting new technologies such as Hadoop. I worked with the Product Owners, developers and other stakeholders to define the changes to be implemented via user stories, acceptance criteria, report mock-ups, and process flow diagrams.

Various, UK and Abroad

June 2001 - Sep 2016

Prior to September 2016 I worked for various companies including Co-op Bank (Manchester), Swinton Insurance (Manchester), GE (Leeds), Cegedim Rx (Preston), Pearson Vue (Noida, India), Pearson VUE (Salford Quays, UK), Yates (Bolton), and Alphameric Hospitality (Godalming, Surrey).

as Membership Secretary for the Manchester Wheelers cycling club.

Recommendations

"Nic is a fantastic person to work with. Her tenacity and focus on getting to the heart of a problem is second to none, and her ability to synthesise, simplify and describe solutions is outstanding"

Dan Snell, Senior Architect, Swinton Insurance

"Nic is without doubt one of the most competent BA's I have had the pleasure of working alongside."

Pete Wittering, Delivery Manager, Equal Experts

"Nicola is a highly effective communicator who cares strongly about doing a good job"

Clare Sudbury, Developer, Swinton Insurance

EDUCATION

Manchester Metropolitan University, Manchester – Data Science MSc (Pass with Distinction)

Sep 2019 – Oct 2020

University of Leeds, Leeds – Computing BSc (2:1)

Sep 1998 – June 2001

Alton College, Alton – A-Levels: Computing (A), Maths (A), Further Maths (C)

Sep 1996 – June 1998

PROJECTS

Detection of Hate Speech with Text Machine Learning – MSc Dissertation Project

Natural language processing & deep neural networks (in Python) to predict hate speech on Twitter, in English and Spanish. My project resulted in a model on the Spanish dataset that achieved a macro F1 score of 0.95, outperforming the previous best model (0.73) published by previous researchers. Key sub-topics covered by the project were NLP, machine learning with text, data cleansing, data analysis, data visualisation, data augmentation with synthetic data, interpretability (explainability) using LIME, Naive Bayes, Logistic Regression, SVM, BERT and Multilingual BERT.

Predicting the Severity of Road Traffic Accidents in Greater Manchester – MSc Module Project

Exploratory data analysis, data cleaning, & machine learning in Python, using traffic accident data to predict casualty severity.

Image Classification with Tensorflow – MSc Module Project

Caltech-256 image classification using Python & Tensorflow

Exploratory Data Analysis of Yelp Reviews Using Spark – MSc Module Project

Exploratory data analysis of Yelp reviews using Spark & Python.