

# Christopher Tyson

## Data Scientist

### Education

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MSc. Data Science

[University of Exeter](#)

📅 2019 - 2020

Distinction, 84%

*Machine Learning, Statistics, Networks, Text Analysis, Research Skills*

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BSc. Computer Science and Mathematics

[University of Exeter](#)

📅 2016 - 2019

First Class Hons.

*Programming, Data Structures, Algorithms, Probability, Computer Vision*

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A Levels

[Durham Sixth Form Centre](#)

📅 2013 - 2015

A\*A\*A\*AA

*Mathematics, Physics, EPQ, Computer Science, Further Mathematics*

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### Experience

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Data Scientist

[glass.ai](#)

📅 2021 - NOW

Currently working for `glass.ai`, a small NLP and data mining startup which uses machine learning with crawled data from company websites to help policy analysts, economists and researchers map sectors and economic trends. Responsible for end-to-end project delivery, I have also improved the existing sector classification model, wrote a web app that can cluster text for easier labelling of training data, and have developed a bespoke, GAN-inspired text classifier which can learn from just positive and unlabeled data.

*Python, NLP, Data Mining, Web Scraping, keras, tensorflow*

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Software Engineer

[JPMorgan Chase & Co.](#)

📅 2018 - 2021

Worked in a graduate role with responsibilities including: visualising and summarising large data sets, managing and developing interactive dashboards to assist clients in eTrading, and maintaining and updating a large code repository.

Previously had two internships - one of which had similar responsibilities to my graduate role, the other looked at modernising the Continuous Integration pipelines, using an in-house extension of Jenkins and Groovy scripting.

*kdb+, Java, Groovy, Grafana, Jenkins, Git*

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### Contact

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**Location**

Sunderland / London

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**LinkedIn**

`chris-tyson`

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### Skills

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**OS**

*Linux, Windows*

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**Programming**

*Python, Java, MATLAB, R, kdb+*

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**Data Science**

*pandas, matplotlib, sklearn, ggplot2*

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**Machine Learning**

*keras, tensorflow, optuna*

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**Natural Language Processing**

*nlTK, spacy, transformers*

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**Cloud**

*AWS, GCP, Docker, Kubernetes*

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**Other**

*Git, Grafana, L<sup>A</sup>T<sub>E</sub>X, SQL, networkx*

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### Achievements

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**Dean's Commendation**

Awarded for Exceptional Performance on MSc. Data Science

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**MSc. Award**

Awarded for Highest Departmental Performance on MSc. Data Science

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**Machine Learning**

Achieved a mark of 99% in my MSc. Machine Learning module, with two courseworks receiving a mark of 100%.

## Experience (Continued)

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### Software Engineer

#### Just Like Us

📅 2020 - 2021

Worked in a team of software engineers to build a dynamic form for LGBTQ+ Charity Just Like Us' "Tell a School Campaign", helping users refer new schools allowing the charity to grow their network.

*Wordpress, Salesforce, APIs, Javascript, SQL, PHP*

### Student Staff Liaison Committee Chair

#### University of Exeter

📅 2017 - 2018

Elected Chair of the SSLC in 2017. Role included noting concerns and issues from the student body, chairing departmental and college level meetings attended by Computer Science faculty, and providing a voice for students.

*Presentation Skills, Communication Skills, Leadership*

## Coursework

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### Research Methodology

Peer Review, Literature Review, Paper Writing

### Machine Learning

Neural Networks, Random Forests, Bagging and Boosting, Reinforcement Learning

### Computer Vision

Image Classification, Landmark Detection, Pose Estimation

### Social Networks and Text Analysis

Network Statistics, Motif Based Community Detection

### Data Visualisation

Exploratory Data Analysis, Network Visualisation, ggplot2

## Projects

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### Predictive Adversarial Learning

📅 2022 - NOW

Currently building out a new ML capability at `glass.ai` in the form of a GAN-based model which can learn from just positive and unlabeled data. Two text embedding based models are trained in tandem, with custom loss functions evolved using genetic algorithms to optimise parameter vectors representing 4-variate Taylor Series expansions.

*Python, ML, keras, tensorflow, PU Learning*

### Text Cluster Explorer

📅 2021 - 2022

Built a Flask web app that takes in structured text and miscellaneous attributes as an input, and displays clusters of text, allowing users to interact, search and label data. Text is embedded using a user selected method (e.g. Universal Sentence Encoder), dimensionality reduction is applied with UMAP, then clusters are found using HDBSCAN, which are finally labelled with key phrases using TF-IDF.

*Python, Javascript, UMAP, Text Embedding, Flask, Svelte*

### MSc. Thesis

#### A Bird's Eye View: To What Extent Can We Socially Sense Local Attitudes to Political Parties Using Twitter?

📅 2020

This project looked to assess the viability of electoral prediction methods using socially generated data, with a focus on Twitter. A case study of the 2019 UK General Election was used and a prototypical method was developed to locate Twitter users to UK constituencies, determine their voting intentions and tally these votes. Awarded 77% and was recommended for publication.

*Python, Web Scraping, ML, NLP, Sentiment Analysis, Network Analysis*

### BSc. Dissertation

#### 3D Facial Scanning and 3D Printing Based on a Single Commodity Camera

📅 2019

Involved the production of a system which could scan a user's face using commodity technology (a webcam or phone camera) and produce a 3D model utilising various Computer Vision techniques. Novel post-processing steps then prepared the model, and outputted in a format which was able to be 3D printed. Awarded 75%.

*Python, MATLAB, Computer Vision, Statistics, 3D Printing*