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# CHRIS DUCKWORTH

## DATA SCIENTIST

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### CONTACT

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### HARD SKILLS

**Python**  
NumPy, SciPy, Pandas, Jupyter

**Data Visualisation**  
Matplotlib, Seaborn

**Version Control**  
Git, Github

**High performance computing**

**Bash, Unix**

**Machine Learning**  
Scikit-Learn, Keras, TensorFlow

**Other coding (intermediate)**  
SQL, R, Matlab

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### SOFT SKILLS

**Communication**  
Simplifying complex topics  
Large audience conference speaking

**Collaboration**  
Experienced in being an intermediary between working groups

**Mentoring**  
Individual development  
Small group teaching

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### TECHNICAL SKILLS

**Big Data**

**Probability and Statistics**

**Scientific Analysis**

**Mathematics**

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### SUMMARY

Data scientist having recently completed a PhD in Astrophysics. I have over 5 years experience in implementing statistical models on various complex datasets (TB scale). Working between several large teams, I have significant experience in simplifying complex concepts for a variety of audiences, and, managing competing priorities. For me, presentation and detail is crucial, and, I am enthusiastic to develop data driven solutions to new problems.

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### PROJECTS

#### Galaxy evolution in observations and simulations (3 publications)

Combined a variety of large datasets (i.e. different formats and structure) to create statistical models of galaxies formation and determine how they depend on the (dark) matter we can't see.

*(Skills developed: big data, python, statistical modelling, data visualisation, concise writing)*

#### Machine Learning

Practical implementation of various machine learning algorithms (random forests, CNNs, RNNs) to understand how galaxy properties depend on environment.

*(Skills developed: python, popular ML libraries, big data)*

#### Other Projects

Intermediate experience in extracting data using SQL, and, 3D visualisations of data.

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### EDUCATION AND EMPLOYMENT

#### PhD Astrophysics - University of St. Andrews 2016 - 2020

Galaxy evolution in large astronomical databases and simulations  
*(application of mathematics, data analysis, problem solving, machine learning)*

#### Research Analyst - Flatiron Institute, New York 2019 - 2020

Working as part of the Centre for Computational Astrophysics, I condensed TB datasets to understand theoretical galaxy formation  
*(big data, efficient programming, distributed computing)*

#### MSci Physics with Theoretical Astrophysics (1st Class Hons) University of Nottingham / Observatorio Nacional, Brazil 2012 - 2016

Range of modules covering image processing, mathematics, programming, statistics, and, extended project work.

*(Awards: Masters research abroad scholarship, Piazzini Smyth scholarship, BP research scholarship, Sir Peter Mansfield high-achiever scholarship, 1st year academic achievement award)*

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### EVERYTHING ELSE

Outside of the technical skills mentioned, I have frequently presented at, and organised, large international conferences. I have a number of published journal articles working with several collaborations in the process. Throughout my PhD, I taught undergraduate level material, supervised masters level students and communicated current science to the public. I take an active interest in AI and emerging technology, having recently attended CogX and various data science, probabilistic, and, software workshops. Otherwise I am an outgoing person who enjoys finding new ways of staying active in strange times.