

Sam Vaughan

DATA SCIENTIST · PHD ASTROPHYSICIST

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PhD-trained data scientist with 9+ years of experience applying advanced statistical and machine learning techniques in both academic and commercial settings. Proven ability to design and deploy scalable models, lead projects and communicate insights effectively to both technical and non-technical stakeholders.

Skills

TECHNICAL SKILLS

- Fluent in the statistical analysis ecosystems of a variety of programming languages (e.g **python**, **R**, **SQL**) and tools (e.g. **pandas**, **matplotlib/ggplot**, etc).
- Machine Learning analysis and pipeline development, probabilistic model building and hyper-parameter tuning (e.g. **sklearn**, **tidymodels**, **stan**).
- Deep learning with **tensorflow** and **pytorch**, model fine tuning, AI tools.
- Model deployment and development with AzureML in a production environment.
- Experience with **git**, **github** and tools to facilitate collaborative software development.

LEADERSHIP AND PROJECT MANAGEMENT

- Experience in a key technical leadership role in a multi-million dollar 7-year project.
- Designed and led international research collaborations, typically between 5-10 researchers over 1-3 years.
- Supervised a total of 8 junior colleagues at PhD, Masters and undergraduate level.

COMMUNICATION

- Experience presenting technical concepts to inform and persuade non-expert stakeholders.
- Author of 54 scientific papers in peer-reviewed international scientific journals with over 800 citations.

Experience

Betr

Melbourne, Australia

DATA SCIENTIST

Jan 2025 – Present

- I designed and built a bespoke deep-learning content recommender system from scratch, with imminent deployment to 200k users.
- I led the switch to the AzureML cloud platform, upskilling other team members in its use.

PolliQ

Melbourne, Australia

CONSULTANT DATA SCIENTIST (PART TIME)

September 2024 – March 2025

- I predicted the Australian 2025 federal election results by building a Bayesian statistical model.

AE Capital

Melbourne, Australia

QUANTITATIVE ANALYST

April 2024 – September 2024

- Designed and constructed bespoke datasets for analysing financial transactions

Macquarie University

Sydney, Australia

RESEARCH ASSOCIATE IN DATA INTENSIVE ASTRONOMY

October 2022 – March 2024

- I designed, executed and published my own independent research, all of which focused on applying novel statistical and machine-learning methods to astrophysical data.

University of Sydney

Sydney, Australia

RESEARCH ASSOCIATE

June 2019 – October 2022

- I designed and implemented software pipelines crucial to the success of a large, multi-million dollar research project.

Education

DPhil in Astrophysics

UNIVERSITY OF OXFORD

2015 – 2019

- PhD Thesis: A study of stellar populations in the last 5 billion years using Integral Field Spectroscopy

MPhys in Physics

UNIVERSITY OF OXFORD

2011 – 2015

- First Class Honours