Samuel **Hinton**, PhD

Data Scientist | Software Engineer | Astrophysicist

Links

Website: CosmicCoding
LinkedIn: samuelreay
GitHub: samreay

Skills

Python, C, golang, Javascript, SQL, Java, Stan, Git
Machine learning
Numerical Optimisation
Visualisation
Bayesian Statistics
Model fitting

Awards

Nobel Laureate Delegate
UQ Future Superstar
ASA Bok Prize
Science Grad. of the Year
AIP Prize
University Medal (Science)
University Medal (Eng.)
AAO Honours Scholarship
A.W. Oakes Scholarship
Harriet Marks Bursary
Helen Thompson Prize
IET Student Prize
David Andrew Krnak Prize
UQ Future Leader
IEEE Student Prize
GroundProbe Prize
RWH Hawken Scholar
Alstom Prize
John Black Prize

Communication

Numerous podcast appearances.

Academic presentations in more than a dozen institutions and countries.

Science outreach appearances on multiple TV shows, radio channels and public events.

Publications

6 first author
100+ contributing author
Areas of software, statistics, astrophysics, medicine.

Experience

2020-Now **Arenko Group** London, UK
Senior Data Scientist
Designed and productionised probabilistic time-series forecasting models for UK energy markets. Implemented MLOps pipelines in AWS, including feature store, model versioning (mlflow), model serving, data orchestration (Prefect) and digestion (RDMS) in a microservice framework. Created library of transformations, models, and utilities in Python. Created key visualisations of market opportunities (matplotlib, plotly, Dash, angular). Mentored junior data scientists and helped grow the data science team.

2020 **University of Queensland** Brisbane, Queensland, Australia
Lead Data Analyst
Created a data science pipeline for the COVID-19 Critical Care Consortium. Homogenised and standardised heterogeneous medical data for eventual use in causal modelling. Created reports, dashboards, and products as support for clinical staff.

2016-2020 **University of Queensland** Brisbane, Queensland, Australia
Astrophysicist
Created data pipelines to run from data preparation to classification, modelling and reports. Created classifiers to discriminate between supernova. Applied high-dimensional modelling techniques on astrophysical problems. Organised a team of two dozen researchers across multiple countries.

2017, 2016 **Lawrence Berkeley National Laboratory** Berkeley, California
Research Fellowship
High-dimensional Bayesian Hierarchical Modelling for Supernova Cosmology. Involved using numerous MCMC fitters, Stan, Gaussian processes and many numerical techniques.

2010–2014 **GBST** Brisbane, Queensland, Australia
Software Developer
Developed business intelligence reports and user-facing applications (angular, Java) for front office financial traders. Created and optimised large scale SQL queries. Optimised databases and applications for network, processing, and memory constraints.

Education

2016–2020 **Doctor of Philosophy** University of Queensland
Thesis: Analysed supernovae in the Dark Energy Survey using Hierarchical Bayesian models to constrain the nature of dark energy.

2010–2015 **Bachelor of Science** (Physics)(Hons, 1st) University of Queensland
Thesis: Analysed the Baryon Acoustic Oscillation signal imprinted in the large scale structure of the universe.

2010–2014 **Bachelor of Engineering** (Software)(Hons, 1st) University of Queensland
Thesis: Created the first online client-only web application to compute redshifts from telescope spectra.