# Daniel R. J. **Roythorne**

Full-stack data scientist

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## Skills

**Programming** Python, AWS, K8S, R

**Data Engineering and Machine Learning** data pipelining, ML fundamentals, system integration

## Experience

### AstraZeneca

*Cambridge, UK*

Associate Director - Principal AI Engineer

*February 2020 - present*

Technical lead of *Data Find and Integrate* knowledge graph team, creating multi-modal metadata integration and providing search capabilities to data scientists and clinical trial designers. Tech stack comprises dbt, Snowflake, Apache Airflow, Neo4j and Ontotext GraphDB quad store, with compute predominantly Python on AWS ECS, deployed with Terraform via GitHub Actions. Lead developer on the first GxP validated machine learning projects to be released into production within AstraZeneca, including an NLP-assisted adverse event monitoring tool in support of the ChAdOx1 nCoV-19 vaccine programme.

### ThoughtRiver

*Cambridge, UK*

Senior Engineer

*July 2018 - December 2019*

Natural language processing pipeline engineering and model development for a legal technology product (Python (scikit-learn, Spacy, django, Postgres), Ansible, Docker).

### Cambridge Consultants / IPEG Corporation

*Cambridge, UK*

Senior Data Scientist

*March 2017 - July 2018*

Data science and machine learning consultancy for med-tech and industrial clients. Technical lead accent recognition project demonstrated at CES 2018, directly generating 1M in sales. Geospatial analytics and algorithm design for IoT platform (K8S on GCS). Wearables for migraine prediction on behalf of a global pharmaceutical client.

### BMT Group

*Teddington, London*

Research Scientist

*July 2012 - February 2017*

Responsible for technical managment and development life cycle of European Union research projects: research proposals, technical documents, research and software development. Dissemination of research outputs, technical project management. Diverse roles in the following projects:

- GETAWAY - Guardian University Awards winner 2015 - simulation, case-based reasoning and user interface for optimal evacuation from underground rail terminals.
- Dolphin - development and deployment of predictive models for ship efficiency.
- SUPPORT - detection of divers using mechanical scanning sonar on an autonomous underwater vehicle.
- SUNNY - data fusion, tracking and decision support algorithms for tracking of ships using a swarm of heterogeneous UAVs.

### Rare Ltd.

*Twycross, Leicestershire*

Quantitative Researcher/Product Analyst

*January 2012 - July 2012*

- Generating behavioral insights from Xbox Live and in-game telemetry (survival analysis, time-series clustering).
- Business analysis and reporting.

### Man

*London*

AHL Technology Group Intern

*July 2011 – September 2011*

- Development of a web-based visualisation of trading execution costs using R and Javascript.
- Implementation and analysis of an SVM-based trend following trading strategy.

## Education

### Univeristy of Warwick

*Coventry, UK*

PhD in Elementary Particle Physics (not completed)

*2005 - 2011*

- Neutrino phenomenology and event reconstruction techniques. C/C++ for MCMC/Gibbs sampling and optimisation of likelihood functions with complex topologies (Physics Letters B, Volume 657, Issues 4–5, 6 December 2007, Pages 210-216).
- Implementation in Python of localised regression for voxellized tracking in a simulated voxellized liquid Argon neutrino detector (European physical journal C., 74 (3). p. 2832).

**University of Warwick** *Coventry, UK*

MMath in Mathematics (2:1) *2000 - 2004*

- Lie algebras over the integral octonions, commutative rings, Galois theory.
- Seminar tutor and supervisor across mathematics, physics and business faculties.