

# EDWARD PEARCE

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## EDUCATION

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**The University of Sheffield, PhD in Mathematics**

*October 2016 - March 2021*

Supervisor: Dr. Paul Johnson

**University of Warwick, MMath Master of Mathematics**

*October 2012 - July 2016*

First Class Honours. 92.8% overall; top 2% in a class of  $\approx 300$ .

## EXPERIENCE

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**Munich Re (GrovesJohnWestrup Private Clients)**

March 2021 - Present

*Pricing Data Scientist*

*London, UK*

- Developing, testing, and deploying scalable machine learning models in R to enhance pricing and portfolio management; improving existing approach from both statistical and engineering standpoint
- Delivering end-to-end analytical infrastructure with Power BI, combining, processing, and visualizing multiple data sources for consumption by key decision makers; providing insights leading to 2 new hires
- Partnering with Underwriting, Claims, Compliance, and Broker Relations business functions

**Health Data Insight**

July 2019 - September 2019

*Cancer Data Analyst*

*Cambridge, UK*

- Using Python and SQL for data extraction, automating statistical tests, visualization
- Building a framework to analyse synthetic datasets of patient tumour records
- Presenting results to HDI board members and Public Health England stakeholders
- Chairing Analysts East team meeting; organising social events (group meals, punting)

**STFC AI&ML Summer School UCL**

July 2018

- Lectures from ASI Data Science on machine learning algorithms in theory and practice
- Practical labs using cloud computing with Intel (Devcloud), Amazon (Web Services), Nvidia
- Case studies on applications in industry and physics from Dell, Mellanox, LIGO, SKA
- Poster session presenting; volunteering for an outreach event to teach secondary school children about decision trees and deep learning using LHC data.

**TAS Services Ltd**

July 2016 - September 2016

*Research Analyst*

*Hong Kong*

- Using Python for web scraping, data analysis and interfacing with SQL and MongoDB
- Automating data comparison across multiple sources for accurate data management
- Linking databases and preparing data for statistical modelling to inform investment strategies
- Discovering a new culture through international work experience

**Warwick Maths Society**

February 2014 - April 2016

*President (2015/6) & Sponsorship Officer (2014/5)*

*University of Warwick*

- Managing a team of 15 exec members, chairing meetings, and organising events of varying sizes for our 900-strong membership, including external trips, summer barbecue
- Secured two new sponsors for the society, increasing sponsorship funds by 100%
- Presenting at the Warwick Imperial undergraduate conference on my URSS summer research project.
- Delivered a revision lecture on linear algebra to over 200 of my peers

## PROJECTS

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*Physics Simulation: n-body system* Spring Semester 2020  
Extracurricular course assignment for COM4521 Parallel Programming with GPUs. Comparing performance of serial and parallel programming techniques using C, OpenMP, and CUDA.  
Source code: <https://github.com/edwardmpearce/COM4521>

*PyParti: Python for Partitions* July 2020  
Python/SageMath package for integer partitions, combinatorics calculations and visualization.  
Automated testing with GitHub Actions workflow. Cloud-hosted notebooks with Docker and Binder.  
Source code: <https://github.com/edwardmpearce/pyparti>

*Simulacrum Test Suite* July 2019 - September 2019  
Software for calculation and visualisation of statistical tests comparing a synthetic dataset with its training set, written using Python, Oracle SQL. Presented at HDI Symposium (Cambridge, Nov. 2019)

*Personal Website* Spring 2019 - Present  
Website for online resume, teaching material, mathematical puzzles, web development practice.  
Written with Hugo (Go-based web framework). Continuous Integration with Travis CI.

*Partitions Lab* Spring Semester 2019  
Tutorial website about integer partitions, with interactive code cells using SageMath computer mathematics software. Written with Hugo, LaTeX, TikZ, HTML, JavaScript.

*Artificial Intelligence and Earth Observation for the Prediction of Malaria Outbreak Risk* May 2019  
Data science project for isardSAT using satellite data on soil moisture and land temperature.  
Source code: <https://github.com/edwardmpearce/cardiff-study-group-ai-in-healthcare>  
Presented at Innovate UK AI in Health & Care Study Group with Industry at Uni. of Cardiff.

*Sporadic Finite Subgroups of  $SL(3, C)$  and their McKay Quivers* July 2015 - September 2015  
Funded by grant through the Undergraduate Research Scholarship Scheme, supervised by Professor Miles Reid, University of Warwick. Source code: <https://github.com/edwardmpearce/urss-project>  
Presented at Warwick Imperial Autumn Meeting (Uni. of Warwick, Nov. 2015)

## TEACHING EXPERIENCE

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**Graduate Teaching Assistant** October 2016 - December 2020  
*University of Sheffield:* Face-to-face and online teaching experience leading tutorials on topics including Core Mathematics, Engineering Mathematics, Scientific Computing, and Statistical Data Science.  
Programming labs and mathematics tutorials with class sizes ranging from 15-40 students.

**Supervisor** October 2015 - July 2016  
*University of Warwick:* Small group supervisor for 2x5 1st year mathematics students plus marking.

## ADDITIONAL SKILLS

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<b>Computer Languages</b>	Python (PyData stack: pandas, scikit-learn, Tensorflow, Plotly), C (OpenMP, CUDA), R, Power BI (Power Query M, DAX), Java, Matlab, Mathematica, Magma
<b>Databases</b>	MySQL, Oracle SQL, mongoDB, MSSQL Server
<b>Tools and Frameworks</b>	LaTeX, git, bash, Hugo, Flask, Docker
<b>Languages</b>	English (native), Mandarin Chinese (Limited working proficiency)
<b>Interests</b>	Chinese films, Yoga, CS50x, Advent of Code, Hiking (Peak District)