

I am an experienced Quantitative Researcher with a deep background in data science, specializing in predictive modelling, machine learning, and cloud computing solutions. Demonstrated success in leading innovative projects to enhance decision-making and business processes, underpinned by a robust academic foundation in mathematics and data analytics.

Current Role

Quantitative Researcher | Impossible Cloud | June 2024 - Present

- Spearheading advanced data analysis and predictive modelling to optimize cloud computing solutions and tokenomics.
- Utilizing machine learning techniques to enhance decision-making, operational efficiency, and resource allocation across decentralized ecosystems.
- Collaborating with cross-functional teams to integrate quantitative research into product development, including building machine learning models that predict token supply and demand for more balanced market operations.
- Developing comprehensive simulations incorporating machine learning algorithms to stress-test economic models under various scenarios, ensuring accuracy and robustness in the cloud network.

Skills

Technical Skills	<ul style="list-style-type: none"> • Programming: Python, C++, Bash, SQL, VBA, Maple, Haskell, Matlab, R, C#, HTML, CSS. • Python Libraries: Scipy Stack, Scikit-Learn, Pytorch, Tensorflow, Scikit-image, Seaborn, Plotly, XGBoost, Prophet, Keras. • Version Control: Bitbucket, Github, Perforce. • Database Management: Snowflake ETL and DDL, DBT, Jinja. • Schedulers: Crontab, Airflow, Jenkins. • Data Visualization: BI, LaTeX, Jupyter Notebooks, Tableau. • CI/CD: Development and implementation of CI/CD pipelines. • Cloud Platforms: Proficient in Azure and AWS services, including Lambda functions, EC2 instances, and S3 for scalable data solutions. • Project Management: Jira, TargetProcess.
Data Visualisation	<ul style="list-style-type: none"> • Expertise in presenting intricate spatial statistics and game analytics in an understandable format. • Delivered mathematically complex analyses at Marmalade Game Studios to non-data specialists.
Logical and lateral thinking	<ul style="list-style-type: none"> • Established a robust, data-centric culture as the inaugural data hire at Marmalade Game Studios. • Innovatively integrated a 20-year-old dataset into a modern dashboard at Jagex.
Effective communication	<ul style="list-style-type: none"> • Authored PhD thesis, conference papers, and white papers for projects. • Presented mathematical talks and collaborated with medical experts using non-technical language. • Volunteered to present PhD research to the general public; created mathematical problems for students. • Set up a Confluence page and communicated a range of data-related insights at Marmalade Game Studios
Teamwork, leadership and management	<ul style="list-style-type: none"> • Fostered cross-departmental collaborations at Marmalade Game Studios, bringing about an intersection of ideas and tools. • Drafted and executed strategic documents and projects, blending strategy and execution seamlessly. • Led comprehensive investigations and research at Marmalade Game Studios to inform and refine business strategies. • Demonstrated proactive leadership in addressing challenges, ensuring seamless project executions and robust data infrastructure. • Collaborated in a diverse 'Kaggle' team; initiated, organized, and led group meetings. • Established the University of Exeter Judo Club; served in leadership roles in university clubs.
Teaching and mentoring	<ul style="list-style-type: none"> • Provided mentorship and guidance to project managers and team leads at Marmalade Game Studios, focusing on the application of data-driven decision making and strategic project alignment. • Delivered technical seminars at Jagex on cutting-edge analysis techniques. • Tutored 3rd-year undergraduates at the University of Exeter; coached judo techniques.
Additional skills and hobbies	<ul style="list-style-type: none"> • Fully bar trained • Sport including running, hiking, table tennis and judo • Level 2 UKCC judo coach, including being first aid trained. • Non-fiction reading, especially military history • Cooking and baking

Previous Work Experience

Senior Data Scientist | Marmalade Game Studios | June 2023 - June 2024

- Established the foundation of a data-centric culture, pioneering game analytics and strategic decision-making, significantly influencing product and marketing strategies with advanced models such as XGBoost and linear regression.
- Engineered a comprehensive Tableau dashboarding infrastructure to monitor game health metrics, enhancing real-time decision-making capabilities.
- Conducted rigorous pricing analysis for flagship games, directly impacting pricing strategies across global markets.
- Developed and implemented a robust CI/CD pipeline for seamless deployment and data capture, integrating an accurate Prophet forecasting model to predict game performance and revenue trends.

Data Analyst (Data Science) | Jagex | August 2021 - May 2023

- Analysed player churn from Runescape using ML techniques (bivariate regression in scikit-learn)
- Evaluated the impact of price changes for membership and MTX products
- Authored a white paper on the relationship between economic recession and company KPIs
- Delivered a dashboard solution using Dundas BI to communicate game metrics
- Developed ETLs and DDLs for data aggregation and description

Data Modeler | Epimorphics | January 2021 - July 2021

- Utilized Schema.org metadata to enhance the visibility of allergen recall alerts issued by the FSA
- Developed a prospective data quality commercial toolkit

Supply Chain Intern | Tesco | July 2014 - August 2014

- Self-taught VBA and SQL to develop an algorithm for predicting future sales of long lead time items

Intern | Rolls Royce Nuclear Division | July 2013 - August 2013

- Worked on PWR 3 reactors, learning to read engineering drawings and enhancing professional competencies

Education and Research Experience

Ph.D. in Automated Quantification of Human Islet Structure and Geometry | University of Exeter | 2016-2021

- Investigated the changes in the pancreas' subunits due to diabetes, applying computational techniques to analyse tissue geometry.
- Developed an image processing pipeline using advanced tools such as Bash, scikit-learn, scikit-image, the scipy stack, seaborn, and ffmpeg.
- Conducted interdisciplinary projects including epileptic seizure prediction and microtubule growth, integrating data science with biosciences.

MMaths (Integrated Mathematics Master's degree) | University of Durham | 2011-2016

- Graduated with first class honours in undergraduate and 2.1 in Master's studies.
- Specialized in computational modelling; dissertation on exoplanet earthquake modelling was ranked second in the year.
- Presented research on recursive pendulum models at Tomorrow Mathematicians Today (TMT) conference at York University.

Teaching Assistant and Marker | Durham & Exeter University | October 2015 - July 2020

- Delivered seminars and tutorials, significantly enhancing students' understanding of complex mathematical and data science concepts.
- Provided extensive academic support, marking assignments, and offering feedback to optimize learning outcomes.

Awards and Scholarships

- Engineers Gate Hackathon 2018: Secured first place in both the individual mathematics and computer science challenges.
- EPSRC Summer Scholarship 2015: Awarded by Durham University for research on delamination of thin films.