

MORGAN REES

PHD RESEARCHER IN MATHEMATICS

SUMMARY

PhD researcher in mathematics, currently studying Topological Solitons, with work experience in statistical underwriting and private tutoring in mathematics. Experienced in high level mathematical problem solving and computer programming. Interested in jobs in financial trading, namely Quantitative Analyst.

HIGHLIGHTS

PhD in Mathematics providing advanced mathematics skills. Proficient programming in C++, Python and MATLAB. Advanced Analysis skills with fitting data sets. Excellent Research skills. Confident in written and oral communication. Complex Problem-solving skills.

SKILLS & INTERESTS

Problem Solving: I gained Complex mathematical and computational problem-solving skills both from my PhD, but also as an underwriter to further compute data in multiple ways.

Technical: I have a complex understanding in R, Maple, MATLAB, Latex, Python and C++. I also have developed skills in Microsoft Office, particularly Excel.

Communication: I have developed skills in presenting work as part of my PhD, alongside documenting data as an underwriter, and working as a tutor has strengthened my interpersonal skills.

Teamwork: I have collaborated with international researchers as part of my PhD. Worked in a group as a and member of the UKC Snooker and Pool society.

EDUCATION

University of Kent, Mathematics PhD (Present) 2021-2025

Conduct research in Mathematical Physics, specifically Topological Solitons. I use mathematical techniques and numerical methods to study Mathematical models.

I have given international research talks.

Used my advanced skills in mathematics and computer science to develop publications that explore mathematical and numerical analysis of complex mathematical systems.

University of Kent, Mathematics and it's Applications MSc 2020-2021

Graduated First Class with Honours.

I studied a variety of modules, including Probability and Classical Inference, Advanced Regression modelling, Quantum Mechanics, Discrete Mathematics, Integrable Systems.

Dissertation titled "Topological Solitons".

University of Kent, BSc (Hons) Mathematics 2017-2020

Graduated First Class with Honours.

Some modules studied are Mathematics in the World of Finance, Numerical Solution of Differential Equations, Games and Strategy, Number Theory, Numerical Methods, Real Analysis, Statistics, Probability, Applications of Mathematics and more.

Invicta Grammar School 2015-2017

3 A-levels: Mathematics (A*), Further Mathematics (B), Computer Science (A); AS-level: Physics (A).

Gold certificate and best in school at the UKMT intermediate maths challenge

Sir Joseph Williamsons Mathematical School 2010-2015

11 GCSE's A* to B grade

WORK EXPERIENCE

Statistical Underwriter, Travel Insurance Facilities PLC 2019-2020

Used complex Excel algorithms to verify and manage data for it to be analysed, as well as performing extensive Excel reports to consolidate data, and to increase productivity and quality of work.

I Analysed data using Tableau and Excel to provide detailed amendments to insurance schemes. Additionally, I completed high-level summaries for external clients outlining scheme analysis and future projections.

Tutor, Kumon Educational Japan Co. Ltd. 2013-2018

Developed excellent customer service skills, and the ability to work flexibly through multiple roles.

Used my confident numerical skills to improve students' knowledge of mathematics and English. Working in a team, whilst training new workers to ensure the best possible service is given to customers.

PUBLICATIONS

Scattering of Vortices with Excited Normal Modes:

<https://arxiv.org/pdf/2406.04164>

Spectral wall in collisions of excited Abelian Higgs vortices:

<https://arxiv.org/pdf/2406.05725>