# Isaac Holt

Email | LinkedIn | GitHub | Personal Website

## Summary

Highly capable mathematician who excels at tackling difficult problems. Focussed and driven, with a passion for setting challenging goals and achieving them.

## Education

**Durham University** 09/2021 – Present

MMath Mathematics

- Third year modules: Analysis, Cryptography and Codes, Differential Geometry, Machine Learning and Neural Networks, Quantum Computing, Topology.
- Predicted 1st (average mark 90%).

**Colchester Royal Grammar School** 09/2019 – 06/2021

- A Levels: Mathematics (A*), Further Mathematics (A*), Physics (A*), Latin (A*).
- Awards: Year 13 Prize for Further Mathematics.

## Research Experience

**Research Project in Tropical Geometry** 06/2023 – 07/2023

Durham University

- Area of research was how the tropical modification of certain polynomial systems can be used to determine the generic root count.
- The results of our work are expected to be published as a paper at the end of this year.
- Attended a working group in Germany relating to this research, to write code for the OSCAR computer algebra system.

## Work Experience

**Web and Communications Internship** 07/2023 – 08/2023

Grey College, Durham University

- Created a new website for Grey College Senior Common Room, using React, Next.js, Bootstrap, and KV storage.
- Built an admin dashboard with an email client for sending markdown emails and template emails.
- Developed a password-less email authentication system for the dashboard.

**Student Digital Leader** 09/2022 – 06/2023

Durham University

- For the first few weeks, I worked in online support with the university's digital services for the new students.
- I then worked as a UAT (User Acceptance Testing) Analyst within this role, using Azure DevOps and Jira to pass/fail test cases and report bugs for a new website that the university is launching.

**Software Tester** 01/2021 – 03/2021

Blutick

- Tested Blutick's marking software for online GCSE maths exams, reported bugs I found when using the website.
- Given the responsibility of editing the online questions and mark schemes myself using Latex.
- Developed TypeScript program to generate all solutions for questions where many combinations of answers were allowed.

## Projects

**bnum** 05/2021 – Present

Rust library with over 150,000 downloads that provides fixed size signed and unsigned integer types, designed to extend the functionality of Rust's primitive integer types to arbitrary bit sizes. I am developing a floating point type that similarly will extend the functionality of Rust's floating point types to arbitrary bit sizes.

## Extracurriculars

Durham University Mathematical Problem Solving Society | Piano (Grade 8 Distinction) | Grey College Table Tennis A Team | Grey College Badminton B Team | Durham University Chess Society | Durham University Quant Fund | Co-leader of Physics and Maths Society at sixth form

## Skills

Mathematics | Rust | Python | Latex