

# Isaac Holt

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## Summary

Highly capable mathematician, with average mark 91% at undergraduate, who excels at tackling difficult and technical problems. Strong skills in a variety of programming languages and owner of a popular Rust library with over 200,000 downloads. Experience in mathematical research, soon-to-be co-author of a paper on tropical geometry. Focussed and driven, with a passion for setting challenging goals and achieving them.

## Education

### Durham University

09/2021 – 06/2024

MMath Mathematics

- Third year modules: Analysis, Cryptography and Codes, Galois Theory, Number Theory, Quantum Computing, Topology.
- Grade: predicted 1st (average mark 91%).

### 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

Department of Mathematical Sciences, Durham University

- Area of research was how the tropical modification of certain polynomial systems can be used to determine the generic root count of those systems.
- The results of our work are expected to be published in a paper by the end of this year.
- Invited by supervisor to attend a [working\\_group](#) for the OSCAR computer algebra system in Germany, to write code related to the project.

## 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 templated emails.
- Developed a password-less email authentication system.

### Student Digital Leader

09/2022 – 06/2023

Durham University

- Part of a pool of students who worked on various technical projects for the university.
- For the first few weeks, I worked in online support with the university's digital services for 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 event-booking 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

Mathematical [Rust library](#) with over 200,000 downloads that uniquely provides fixed size signed and unsigned integer types, designed to extend functionality of Rust's primitive integer types to arbitrary bit sizes. Used by a blockchain-related package.

## Extracurriculars

Piano (ABRSM Grade 8 Distinction) | Durham University Chess Society | Durham University Spaceflight Society | Durham University Mathematical Problem Solving Society | 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 | JavaScript | Python | Latex | Programming | Research