

Daniel Marshall

About Me

Date of Birth: 30 September 1997
Address: 56 Crowder Crescent, Sheffield, South Yorkshire, S5 7PD
Phone: +44 7932 019991
Email: dmarshall2@sheffield.ac.uk

Experience

- May – Aug 2019** | Student Developer at **Haskell.org**, Google Summer of Code
Automated requirements checking as a GHC plugin
Created a GHC source plugin that allows instructors to define requirements for the code within a project and automatically validate them, having applications for users in a broad range of educational contexts, such as professors teaching functional programming classes using Haskell, community members writing tutorials for their libraries, and authors who are writing textbooks with exercises. Passed all three evaluations, resulting in a successful Google Summer of Code project. Funded by Google, and mentored by Chris Smith, Daniel Cartwright and Fernando Alegre.
- Jun – Jul 2019** | Student Researcher at **School of Mathematics and Statistics**
Morita theory in abelian categories
Learned the basics of category theory and commutative algebra, and worked to understand Morita theory, which gives an equivalence of categories from modules over a ring to modules over the endomorphism ring of a generator, where these can often be more explicit and easier to understand. Presented in September 2019 at a School of Mathematics and Statistics departmental seminar in Sheffield. Supervised by Jordan Williamson, a PhD student working in the field of algebraic topology.
- Jun – Aug 2018** | Student Researcher at **School of Health and Related Research**
A high-performance agent-based model of tuberculosis transmission
Applied FLAME GPU, an agent-based modelling tool developed in the Department of Computer Science, to data collected from Zambia and South Africa to create a model of tuberculosis transmission that runs around 30x faster than a comparable model running on a single core, and can be used to assess the impact of various factors on the spread of TB. Presented in April 2019 at the British Conference of Undergraduate Research in Pontypridd, and currently being written up for publication. Supervised by Pete Dodd and Mozghan Kabiri Chimeh.

Education

- 2016 – 2020** MComp **Computer Science with Mathematics** at **University of Sheffield**
Current Was awarded the *Alumni Fund Hedley Howe Scholarship* (£4,800)
Dissertation: "*Verification and correctness of functional programs in Isabelle*"
Supervisor: Prof. Georg Struth **Submitted to BCUR 2020 in Leeds**
Darwin project: "*Comparing evolutionary algorithms for graph colouring*"
Supervisor: Dr. Dirk Sudholt
- 2014 - 2016** A-Levels at **Longley Park Sixth Form**
Extended project: "*The mathematics of artificial intelligence*"
Grades: Maths A*, Further Maths A, Physics A, Chemistry A, EPQ A*
- 2009 - 2014** GCSEs at **Firth Park Academy**
Grades: 5 A*s, 3 As, 2 Bs

Miscellaneous

Apr 2018 – Apr 2020
Current

Publicity Media Officer for **LGBT+ Committee**, Sheffield SU

Our committee represents, supports, and acts on behalf of LGBT+ students. We organise campaigns to raise awareness of and enact change regarding issues affecting LGBT+ students and also offer confidential welfare support. I am responsible for promoting the committee and its events and activities. I manage online publicity platforms including social media pages, and liaise with external and/or Students' Union groups to publicise events where relevant.

Previously I was the Bi+ Caucus Leader on committee, which meant that I acted as a representative for bisexual and pansexual people in committee meetings, and chaired autonomous caucuses where people in this group could feed back to the main committee on how to be a more inclusive and safe space. In this role I also ran a successful event for Bi Visibility Day in 2019, in collaboration with the LGBT+ Staff Network.

Feb 2017 – Jun 2020
Current

Senior Student Ambassador for **Department of Computer Science**

Student ambassadors act as professional representatives of the university and the department. I work as part of a team that participates in a range of initiatives to support departmental and faculty recruitment, including acting as a tour guide for visitors and supporting open days and departmental visit days. This involves demonstrating commitment, reliability, and key transferable skills, including teamwork and the ability to tailor communications to engage effectively with a diverse range of audiences.

August 2019

Student Volunteer at **ICFP 2019**, Berlin

ICFP is an annual programming languages conference where researchers and developers meet to hear about the latest work on the design, implementations, principles and uses of functional programming. As part of the team of student volunteers in 2019 I had several roles in assisting with running the event, including ensuring that the sessions in various workshops were running smoothly, recording talks, and supervising lunch hours.

In return I was given the opportunity to attend at no cost, which was a valuable experience of research life. As a result of this experience, I have also applied to volunteer at PLDI in June 2020, taking place in London.

Oct 2018 – Dec 2018

Volunteer Instructor for **Code First: Girls**, Sheffield

Code First: Girls is a charity that aims to increase the number of women and non-binary people in technology. I worked with them as a volunteer instructor to deliver a practical 8-week course on basic HTML, CSS and JavaScript to a group of students at the University of Sheffield from a variety of backgrounds with no prior programming experience, in order to help them develop a skill they would otherwise not have had access to, and hopefully increase the number of opportunities available to them.

Oct 2016 – May 2018

Academic Representative for **School of Mathematics and Statistics**

I was selected to be an academic representative for my course, and worked to represent the views of students on my course through both formal meetings with senior staff and in informal discussions with individual lecturers. I attended a number of departmental committee meetings and liaised with a variety of university staff, giving me the opportunity to develop skills in communication and negotiation, as well as the chance to learn how an academic department operates.

References available on request.

MComp **Computer Science with Mathematics**

Grades

Module	Grade	Credits
COM1001 Introduction to Software Engineering	78	20
COM1003 Java Programming	86	20
COM1008 Web and Internet Technology	91	10
COM1009 Introduction to Algorithms and Data Structures	99	10
MAS110 Mathematics Core 1	71	20
MAS111 Mathematics Core 2	84	20
MAS114 Numbers and Groups	91	20
FCE1001 Global Engineering Challenge Week	Dist.	0
COM1006 Devices and Networks	87	20
COM2001 Advanced Programming Topics	84	20
COM2003 Automata, Logic and Computation	86	20
MAS211 Advanced Calculus and Linear Algebra	72	20
MAS220 Algebra	89	20
MAS221 Analysis	90	20
FCE2001 Engineering – You're Hired	Dist.	0
COM3500 Individual Research Project	89	30
COM3004 Data Driven Computing	91	20
COM3008 Systems Design and Security	75	20
MAS330 Topics in Number Theory	78	10
MAS341 Graph Theory	81	10
MAS344 Knots and Surfaces	69	10
MAS346 Groups and Symmetry	75	10
MGT388 Finance and Law for Engineers	92	10
COM4520 Darwin Project		30
COM4115 Text Processing		15
COM4502 Speech Processing		15
COM4507 Software and Hardware Verification		15
COM4509 Machine Learning and Adaptive Intelligence		15
MAS438 Fields		10
MAS442 Galois Theory		10
MAS451 Measure and Probability		10
Current Average	83	