Max Carter

Curriculum Vitae

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Education

2021–Present	**Master of Philosophy (Mathematics)**, The University of Newcastle, (In Progress). Australian equivalent of a European MSc in mathematics.
2017–2020	**Bachelor of Mathematics (Honours)**, The University of Newcastle. First Class Honours, University Medal, Faculty Medal, 94% WAM, 99% Thesis Mark.
2011–2016	**High School Certificate**, Maitland Grossman High School, Australia.

Publications & Written Work

Dec 2021	Carter, M., Willis, G., *Homomorphic Images of Locally Compact Groups Acting on Trees and Buildings*, in preparation.
Feb 2021	Carter, M., Willis, G., *Decomposition Theorems for Automorphism Groups of Trees*, Bulletin of the Australian Mathematical Society, **103(1)**, (2021), 104-112.
Nov 2020	Carter, M., *Two Properties of Totally Disconnected Locally Compact Groups*, Honours Thesis, University of Newcastle, (2020).
Aug 2020	Carter, M., Tornier, S., Willis, G., *Free Products of Graphs*, Australasian Journal of Combinatorics, **78(1)**, (2020), 154-176.
Feb 2019	Report on *Free Products of Graphs* for AMSI Vacation Research Scholarship. Details can be found at `https://vrs.amsi.org.au/student-profile-max-carter/`.

Awards & Achievements

Dec 2021	**Graduate Speaker**. I gave the "graduate address" at my graduation ceremony: a speech on behalf of all graduates in my graduating cohort.
Aug 2021	**University Medal 2020**. Awarded by The University of Newcastle to students who achieved exceptional merit throughout the course of their Bachelor Honours degree.
June 2021	**Faculty Medal 2020**. Awarded by the Faculty of Science at The University of Newcastle to students who achieved exceptional merit throughout the course of their Bachelor Honours degree.
Oct 2020	**Mathematics Prize in 3000 Level Mathematics**. Awarded annually to the student with the best performance, if of sufficient merit, in level 3000 mathematics courses at The University of Newcastle. The prize was awarded to me for my studies during 2019.
Apr 2019	**Ivan Lincoln Rose Prize in Applied Mathematics**. Awarded annually to the student with the best performance, if of sufficient merit, in level 3000 applied mathematics courses at The University of Newcastle. The prize was awarded to me for my studies during 2018.
2017, 2018, 2019 & 2020	Placed on the Faculty of Science Commendation List, The University of Newcastle
2018, 2019 & 2020	A part of the Bachelor of Mathematics Merit Pathway, The University of Newcastle
Nov 2016	Award for Outstanding Achievements in Physics and Mathematics, Maitland Grossman High School
Nov 2016	Award for High Achievements in HSC Mathematics, Maitland Grossman High School

Teaching

2019 – Present	*The University of Newcastle.* I have run workshops and tutorials for a variety of mathematics courses at The University of Newcastle. The role includes marking assessments and invigilating in class exams. Listed below are the courses I have taught:
	MATH1001 - Preparatory Studies in Mathematics (Sem 1 2019, Sem 2 2019, Sem 2 2020, Sem 1 2021)
	MATH1002 - Foundational Studies in Mathematics (Sem 2 2019, Sem 1 2021)
	MATH1120 - Mathematics for Eng., Sci. & Tech. 2 (Sem 2 2020, Sum 2 2021, Sum 2 2022)
	MATH1510 - Discrete Mathematics (Sem 2 2021)
	MATH2310 - Calculus of Science and Engineering (Sem 2 2020, Sem 1 2021, Sem 2 2021)
	MATH2330 - Real Analysis (Sem 1 2020)
	MATH2340 - Linearity and Continuity (Sem 1 2020)
	MATH3205 - Fourier Analysis (Sem 1 2021) (Marking and one-on-one consultations only)
	MATH4101 - Topological Groups (Sem 2 2021) (Marking only)
2018 – Present	*Private Mathematics Tutoring.* I provide private mathematics tutoring for university level mathematics students from first year undergraduate through to postgraduate level. The job involves preparing and giving lessons to students and assisting them with their studies outside of class time. Lessons are run either face-to-face or online.

Other Academic Experience

Dec 2021 – Present	**Founder and co-organiser of the Australian Postgraduate Algebra Colloquium.** Founder and co-organiser of the Australian Postgraduate Algebra Colloquium. The colloquium is targeted at postgraduate mathematics students in Australia studying or doing research in any areas of algebraic nature.
Aug 2021 – Present	**Cohost and co-organiser of the $(GT)^2$ Graduate Symposium.** Co-organising and cohosting seminars for the $(GT)^2$ graduate symposium. For more details about the symposium and future talks, see the following website: `https://www.maths.usyd.edu.au/u/GTSquared/`
Jan 2021 – Present	*Student Mentoring.* I provide mentoring to advanced undergraduate and postgraduate mathematics students studying in various areas of pure mathematics.

Conferences & Workshops

7-10 Dec 2021	65th Annual Meeting of the Australian Mathematical Society, In Person, Hosted by The University of Newcastle, Newcastle, Australia
29 Nov- 3 Dec 2021	Groups and Geometries, Virtual, Hosted by MATRIX, Creswick, Australia.
17-19 Nov 2021	Australia Algebra Conference (AAC05), Virtual, Hosted by the University of Western Australia, Australia.
15-20 Aug 2021	Totally Disconnected Locally Compact Groups via Group Actions, Virutal, Banff Research Station, Banff, Canada.
2-13 Aug 2021	Young Mathematicians in C*-algebras (YMC*A 2021), Hybrid, Hosted in Münster, Germany.
16-19 Feb 2021	Operator Algebras and their Applications, Virtual, Hosted by IPM, Iran.
18-19 Jan 2021	Australia Algebra Conference (AAC04), Virtual, Hosted by the University of Melbourne, Australia.
11-15 Jan 2021	Postgraduate Group Theory Conference 2020, Virtual, Hosted by the University of Southampton, UK.
15-18 Dec 2020	Locally Compact Groups Acting on Discrete Structures (WinSum School), Virtual, Hosted by the Bernoulli Centre, EPFL, Lausanne, Switzerland.
7-11 Dec 2020	64th Annual Meeting of the Australian Mathematical Society, Virtual, Hosted by the University of New England, Armidale, Australia.

6-31 Jan 2020	AMSI Summer School 2020, La Trobe University, Melbourne, Australia.
6-8 Feb 2019	AMSI Connect Conference, University of Melbourne, Australia.

Talks

13 Dec 2021	*Graduate Address*, College of Engineering Science and Environment graduation ceremony, The University of Newcastle.
16 Sep 2021	*Representation Theory of Locally Compact Groups: Spherical and Induced Representations*, Local Seminar, The University of Newcastle.
18 Jan 2021	*Cartan-like Decompositions of Totally Disconnected Locally Compact Groups*, Australian Algebra Conference (AAC04), Virtual.
15 Jan 2021	*Cartan-like Decompositions of Totally Disconnected Locally Compact Groups*, Postgraduate Group Theory Conference 2020, Virtual.
26 Nov 2020	*Two Properties of Totally Disconnected Locally Compact Groups*, Honours Thesis Seminar, The University of Newcastle.
24 Jul 2020	*Two Properties of Totally Disconnected Locally Compact Groups*, Local Seminar, The University of Newcastle.
7 Nov 2019	*Decomposition Theorems for Automorphism Groups of Trees*, Local Seminar, The University of Newcastle.
8 Feb 2019	*Free Products of Graphs*, AMSI Connect Conference, University of Melbourne.
15 Dec 2018	*Free Products of Graphs*, Local Seminar, The University of Newcastle.

Scholarships & Grants

2021/2022	**Australian Government Research Training Program Scholarship** ($\sim$ $57000 AUD)
Dec 2020	Undergraduate Summer Research Scholarship ($3000 AUD)
Dec 2019	Faculty of Science Summer Research Scholarship ($3000 AUD)
Nov 2019	AMSI Summer School Travel Grant ($\sim$ $2000 AUD)
Dec 2018	AMSI Vacation Research Scholarship ($3000 AUD)

Volunteer Experience

2021/2022	*University of Newcastle Peer Mentor Program*.
14 Jan 2021	*National Youth Science Forum*. Assisted running a workshop for high school students covering aspects of symmetry and group theory.
2019/2020	*The University of Newcastle Maths Club*. Cofounded the UoN Maths Club and assisted organising and running various events over 2019 and 2020.

Languages

English (Mother), German (Basic), French (Basic).

Personal Interests

Academics:	Mathematics, Theoretical Physics, Philosophy, Languages.
Sport:	Weightlifting, Running, Cycling, Mountainbiking.

Last Updated

14th December 2021