

Marina Anagnostopoulou-Merkouri

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EDUCATION

PhD in Mathematics

2023 - Present

University of Bristol

Supervisor: Prof. Tim Burness

Master in Pure Mathematics (First Class)

2019 - 2023

University of St Andrews

Final year project on the O’Nan-Scott theorem and base sizes of permutation groups supervised by Prof. Colva Roney-Dougal.

PUBLICATIONS

[4] Computing the congruences of a finite semigroup or monoid

joint with James Mitchell and Maria Tsalakou

30 pages, submitted.

<https://arxiv.org/abs/2302.06295>

[3] Pre-primitive permutation groups

joint with Peter J. Cameron and Enoch Suleiman

Journal of Algebra 636 (Dec. 2023), pp. 695–715.

<https://www.sciencedirect.com/science/article/pii/S0021869323004593>

[2] Association Schemes with given stratum dimensions: on a paper of Peter M. Neumann

joint with Peter J. Cameron

Algebraic Combinatorics Volume 6 (2023) no. 5, pp. 1189-1210.

<https://alco.centre-mersenne.org/articles/10.5802/alco.307/>

[1] Properties of congruence lattices of graph inverse semigroup

joint with Zachary Mesyan and James Mitchell

International Journal of Algebra and Computation.

24 pages, to appear

<https://arxiv.org/abs/2108.08277>

SOFTWARE

Digraphs GAP package

-Improved efficiency for methods used for canonical labelling and graph isomorphism.
-Implemented graph theory algorithms such as the almost linear Tarjan and Lengauer algorithm for computing dominators, and algorithms for reachability.

Semigroups GAP package

-Constructed new algorithms for graph inverse semigroup congruences and congruence lattices and implemented them.

TALKS

[6] **Bristol postgraduate seminar** *November 2023*
Permutation groups and Galois' confusion
University of Bristol

[5] **Seminars on groups and graphs, SUSTech** *October 2023*
New properties of permutation groups
Southern University of Science and Technology (SUSTech), Shenzhen, China (Online)

[4] **York semigroups seminar** *March 2023*
Congruence lattices of graph inverse semigroups
University of York

[3] **Tomorrow's Mathematicians Today** *March 2023*
Pre-primitive permutation groups
University of Greenwich (Online)

[2] **St Andrews Maths Society** *November 2022*
Strongly regular graphs with given stratum dimensions
University of St Andrews

[1] **Tomorrow's Mathematicians Today** *February 2022*
Congruence lattices of finite graph inverse semigroups
University of Greenwich (Online)

TEACHING

University of Bristol *September 2023 - Present*
-Linear algebra tutor *September 2023 - May 2024*

Private tutoring *November 2022 - April 2023*
-Prepared notes and delivered tutorials for GCSE, A-level students, and IB students.

MyTutor *December 2020 - September 2022*
-Prepared notes and delivered tutorials for GCSE and A-level students.

Coronavirus Tutoring Initiative *April 2020 - October 2020*
-Prepared notes and delivered tutorials for GCSE and A-level students.

FUNDING AWARDED

St Andrews Research Internship Scheme

- Funding granted for doing research on permutation group theory. 2022

University of St Andrews Careers Centre Employability Bursary

- Funding granted to extend my summer research internship and undertake a second project on group theory. 2022

LMS Undergraduate Research Bursary

- Funding granted for a summer research project on association schemes. 2022

St Andrews Research Internship Scheme

- Funding granted for completing a research project on computational semigroup theory. 2022

LANGUAGES

Greek (Native), English (C2), French (C2), German (B2).

OTHER

Maths Base Helper

September 2020 - May 2023

- Helping first and second year St Andrews students with questions.

School of Mathematics and Statistics Ambassador

October 2021 - April 2023

- Helping at the school of mathematics and statistics visiting day talks, attended by prospective students.

Zero Gravity mentor

July 2022 - May 2023

- Mentoring a final year school pupil from a low-income background that wants to study mathematics in university.

University of St Andrews Karate Club

- Captain (04/2021 - 04/2023), Covid Officer (09/2020 - 03/22), Wellbeing Officer (04/2020 - 10/2021, 04/2022 - Present), Safety and Fundraising Officer (04/2020 - 04/2021).

St Andrews Athletic Union Colours Award

- Award for exceptional service and dedication to the karate club. 2022

University of St Andrews Mathematics Society

- Social Representative. *April 2021 - March 2022*

Trained in piano and singing (mostly classical)