

Alexander Elzenaar

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RESEARCH AND TEACHING POSITIONS

Max-Planck-Institut für Mathematik in den Naturwissenschaften, Leipzig, Germany

▪ PhD student

Apr. 2022 – ongoing

• Supervisor: Prof. Bernd Sturmfels

The University of Auckland, New Zealand

▪ Research assistant (Professional Casual Staff)

2020 – 2021

• Construction and symmetry properties of spherical (t, t) -designs

• Supervisor: Dr. Shayne Waldron

▪ Graduate Teaching Assistant (GTA) in the Dept. of Mathematics 2019 (Sem. 2) – 2022 (Summer sem.)

• Tutoring and marking: single- and multi-variate calculus; complex calculus; linear algebra; logic and proofwriting; mathematics for computer science; computational mathematics; mathematics for non-mathematicians (infinities, topology, fractals); real analysis

EDUCATION

The University of Auckland, New Zealand

▪ Master of Science with First Class Honours in mathematics

2021 – 2022

• Thesis: *Deformation spaces of Kleinian groups* (https://aelzenaar.github.io/msc_thesis.pdf)

• Advisors: Dist. Prof. Gaven Martin (NZ Inst. of Adv. Study, Massey Uni.), Dr. Jeroen Schillewaert

▪ Bachelor of Science (Hons) with First Class Honours in mathematics

2020

• Dissertation: *Toric varieties* (<https://aelzenaar.github.io/hons/dissertation.pdf>)

• Advisor: Dr. Jeroen Schillewaert

▪ Certificate in Languages

awarded 2020

• Russian and Ancient Egyptian

▪ Bachelor of Science, major in mathematics

2017 – 2019

• Between 2016 and early 2019, I was enrolled in a conjoint Mathematics (BA)/Physics (BSc) degree

• Exchange student at the University of Toronto, 2018 fall semester

The University of Canterbury, New Zealand

▪ STAR programme

2016

• First year university mathematics program for secondary school students

AWARDS & SCHOLARSHIPS

▪ Clay Mathematics Institute Early Career Researcher Support

2023

• for attendance of NZMRI Summer School on Groups and Dynamics in Nelson

▪ University of Auckland Department of Mathematics Student Research Conference prize

2021

▪ University of Auckland Postgraduate Honours / PG Diploma Scholarship

2020

▪ University of Auckland Summer Research Scholarship

2019 – 2020

• Project: Numerical construction of spherical (t, t) -designs

• Advisor: Dr. Shayne Waldron

▪ University of Auckland Faculty of Arts Deans List

2017

▪ NZQA Outstanding Scholar Award

2016

Limited to top 40–60 secondary school students in New Zealand

PUBLICATIONS AND PREPRINTS

[3] [A. Elzenaar](#), G. Martin, and J. Schillewaert, “Concrete one complex dimensional moduli spaces of hyperbolic manifolds and orbifolds”. In: *2021-22 MATRIX annals*. Ed. by David R. Wood, Jan de Gier, Cheryl E. Prager, and Terrence Tao. MATRIX Book Series 5. Springer, to appear. arXiv: 2204.11422 [math.GT], 2022.

[2] [A. Elzenaar](#), G. Martin, and J. Schillewaert, “The combinatorics of the Farey words and their traces” (preprint), arXiv: 2204.08076 [math.GT], 2022.

[1] [A. Elzenaar](#), G. Martin, and J. Schillewaert, “Approximations of the Riley slice”. In: *Expositiones Mathematicae* **41.1** (2023), pp.20–54. DOI: 10.1016/j.exmath.2022.12.002. arXiv: 2111.03230 [math.GT], 2021

PROFESSIONAL AFFILIATIONS

New Zealand Mathematical Society, Student member

[2023-03-25]