

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 Department 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

- Degree to be officially conferred in Sept. 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

- 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” (submitted), arXiv:2111.03230 [math.GT], 2021.

PROFESSIONAL AFFILIATIONS

New Zealand Mathematical Society, Student member

[2022-09-11]