Curriculum Vitae of Matty Van Son

PERSONAL DETAILS

NAME: Matty Van Son

DATE OF BIRTH: 26 May 1994

INSTITUTION: The Open University, School of Mathematics & Statistics, Postdoctoral Research Associate

E-MAIL: matty.van-son@open.ac.uk

WEBPAGE: `mattyvanson.github.io/mattyvanson`

EDUCATION

[2012-2015] BSc in Theoretical Physics and Mathematics, NUI Maynooth

[2015-2016] MSc in Mathematical science, University of Liverpool

[2016-2020] PhD in Mathematics, University of Liverpool
Title: *Extended Markov numbers and integer geometry*

POSTDOCTORAL POSITIONS

[2021-2022] TU Wien, Institute of Discrete Mathematics and Geometry, Projektassistent (FWF), Postdoctoral Research Assistant

[2022-2025] The Open University, School of Mathematics & Statistics, Postdoctoral Research Associate

RESEARCH EXPERIENCE

- **Research areas:**

  - **Geometry**: Geometry of numbers, geometric continued fractions, discrete differential geometry, lattice geometry, hyperbolic geometry, Farey complex
  - **Number theory:** Markov numbers and extensions, Diophantine approximation, continued fractions
  - **Knot theory**: Energy of knots

- **Supervision:**

  - Supervisor as part of Nuffield Research Placements & Experiences (2024)
  - Co-supervisor of EPSRC DTP funded 10-week internship. Resulting paper to appear. (2024)

PUBLICATIONS

[1] O. Karpenkov and M. van Son. Generalized Perron Identity for broken lines. *Journal de théorie des nombres de Bordeaux*, 31:131–144, 2019

[2] M. van Son. Palindromic Sequences of the Markov Spectrum. *Mathematical Notes*, 106:457–467, 2019

[3] M. van Son. Uniqueness conjectures for extended Markov numbers. *arXiv:1911.00746, preprint*

[4] O. Karpenkov and M. van Son. Generalised Markov numbers. *Journal of Number Theory*, 213:16–66, 2020

[5] M. van Son. Equations of the Cayley Surface. *arXiv:2108.02441, preprint*

[6] I. Short, M. van Son, and A. Zabolotskii. Frieze patterns and Farey complexes. *arXiv:2312.12953, preprint*

[7] O. Karpenkov and M. Van Son. Geometry of multidimensional Farey summation algorithm and frieze patterns. *arXiv:2410.13091, preprint*

[8] S. Benzaira, I. Short, M. van Son, and A. Zabolotskii. Enumerating tame friezes over $\mathbb{Z}/n\mathbb{Z}$. *arXiv:2410.23400, preprint*