

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

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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)

CONFERENCE AND SEMINAR ORGANISATION

Organiser of the seminar "Selected Topics in Mathematics - Online Edition" since February 2021

PUBLICATIONS

- [1] O. Karpenkov and M. van Son. Generalised Markov numbers. *Journal of Number Theory*, 213:16–66, 2020
- [2] O. Karpenkov and M. van Son. Generalized Perron Identity for broken lines. *Journal de théorie des nombres de Bordeaux*, 31:131–144, 2019
- [3] M. van Son. Palindromic Sequences of the Markov Spectrum. *Mathematical Notes*, 106:457–467, 2019
- [4] M. van Son. Equations of the Cayley Surface. *arXiv:2108.02441*, preprint
- [5] M. van Son. Uniqueness conjectures for extended Markov numbers. *arXiv:1911.00746*, 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