Curriculum Vitae

Alex Rutar

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Personal Information

Institution	University of St Andrews
Email	alex@rutar.org
Website	https://rutar.org
Citizenship	Canadian
Languages	English (native), French (reading)

Education

2020- **PhD in Mathematics**, ***University of St Andrews***, *St Andrews, UK*
Advisors: Jonathan Fraser and Kenneth Falconer

2016-2020 **Bachelor of Mathematics**, ***University of Waterloo***, *Waterloo, ON*
Major: Pure Mathematics, Minor: Combinatorics and Optimization
GPA: 95.7/100

Fall 2018 **Exchange**, ***Budapest Semesters in Mathematics***, *Budapest*
Magna Cum Laude
GPA: 4.0/4.0

2012-2016 **Secondary School**, ***Tempo School***, *Edmonton, AB*
Advanced Placement National Scholar
GPA: 99/100

Funding

2021	£15,609	**EPSRC Doctoral Funding**
2020	£15,285	**EPSRC Doctoral Funding**
2019	$4,500	**NSERC Undergraduate Research Award**
2018	$4,500	**NSERC Undergraduate Research Award**

Scholarships and Awards

2020	£73,000	**Hansel Scholarship**, *University of St Andrews*
2020	$1,000	**Pure Math Undergraduate Research Prize**, *University of Waterloo*
2016	$20,000	**W. T. Tutte National Scholarship**, *University of Waterloo*
2016	$5,000	**President's Scholarship**, *University of Waterloo*
2016	$2,500	**Rutherford Scholarship**, *Government of Alberta*
2016	$0	**Governor General Bronze**, *Tempo School*

Publications

1. A. Banaji, A. Rutar. Attainable forms of intermediate dimensions. *arXiv:2111.14678 (submitted)*.
2. A. Rutar. A Multifractal Decomposition for Self-similar Measures with Exact Overlaps. *arXiv:2104.06997 (submitted)*.
3. K. E. Hare, A. Rutar. Local Dimensions of Self-similar Measures Satisfying the Finite Neighbour Condition. *arXiv:2101.07400 (submitted)*.
4. A. Rutar. Geometric and Combinatorial Properties of Self-similar Multifractal Measures. *Ergodic Theory Dynam. Systems* (accepted).
5. K. E. Hare, K. G. Hare, A. Rutar. When the Weak Separation Condition implies the Generalized Finite Type Condition. *Proc. Amer. Math. Soc.* 149 (2021), 1555-1568.

Conferences and Presentations

Feb. 2022	**St Andrews Analysis Seminar**: *Attainable forms of intermediate dimensions*
Apr. 2021	**Junior Ergodic Theory Seminar**: *Self-similar measures with non-concave spectra and multifractal analysis*
Jan. 2021	**St Andrews Online Burn Meet**: *Analysis Group Intro Talk*
Oct. 2020	**St Andrews Analysis Seminar**: *Multifractal Analysis for Self-Similar Measures with Exact Overlaps*
Feb. 2020	**Waterloo Analysis Seminar**: *Geometric and Combinatorial Separation Conditions for Iterated Function Systems*
Jul. 2019	**CUMC 2019**: *An Algebraic Proof of Quadratic Reciprocity*
Jul. 2018	**CUMC 2018**: *Pisot–Vijayaraghavan numbers*

Other Skills

LaTeX	typesetting and package development
Python	software development, numerical computation, symbolic computation, graphical tools
Mathematica	functional programming, algorithm implementation for research papers