Lauritz Streck

School of Mathematics, University of Edinburgh

lstreck@ed.ac.uk • lauritzstreck.com

Career

University of Edinburgh **Edinburgh, UK**
Gordon Seggie Brown Fellow *2024–2027*
Postdoctoral position.

Education

University of Cambridge **Cambridge, UK**
PhD in Mathematics of Information *2020–2024*
Thesis: On the Fourier decay and the dimension of self-similar measures. Advisor: Péter Varjú.

The Hebrew University of Jerusalem **Jerusalem, Israel**
MSc in Mathematics *2018–2020*
Thesis: Non-concentration of primes along horocycle orbits in $\Gamma\backslash\mathrm{PSL}_2(\mathbb{R})$. Advisor: Tamar Ziegler.

University of Bonn **Bonn, Germany**
BSc in Mathematics *2014–2018*
Thesis (2017): On the Delta Calculus. Advisor: Christoph Thiele.

Publications

Preprints

1. A duality principle for the neighbourhood of manifolds and applications to counting rational points near curves. arXiv:2610.23797, October 2026.

Published

2. The dimension of random subsets of self-similar sets generated by branching random walk (with P. Allaart). *Annales Fennici Mathematici*, May 2026.
3. On absolute continuity and maximal Garsia entropy for self-similar measures with algebraic contraction ratio. *Mathematical Proceedings of the Cambridge Philosophical Society*, January 2026.
4. On equidistribution of polynomial sequences in quotients of $\mathrm{PSL}_2(\mathbb{R})$. *Ergodic Theory and Dynamical Systems*, October 2025.
5. Non-concentration of primes in $\Gamma\backslash\mathrm{PSL}_2(\mathbb{R})$. *Israel Journal of Mathematics*, March 2025.
6. Low-degree learning and the metric entropy of polynomials (with A. Eskenazis and P. Ivanisvili). *Discrete Analysis*, November 2023.

Teaching Experience

University of Edinburgh **Edinburgh, UK**
Course Organiser *Spring 2026, 2027*
Fourier Analysis (about 30 students; two one-hour classes per week). Revised and extended the existing course material and wrote a new set of lecture notes. Lecturing again in Spring 2027 (upcoming).

University of Edinburgh **Edinburgh, UK**
Substitute Lecturer *Fall 2024*
General Topology (about 50 students). Stepped in for the main lecturer for the first three weeks while he was on medical leave.

University of Cambridge **Cambridge, UK**
Supervisor *Michaelmas 2021*
Probability and Measure (Part II). Four groups of 1–2 students each.

University of Bonn **Bonn, Germany**
Teaching Assistant *Summer 2017, 2018*
Stochastic Processes. Weekly two-hour class for about 15 students.

Awards and Scholarships

Smith-Knight/Rayleigh-Knight Prize **Cambridge, UK**
Prize (Grade 2), for an essay based on the paper on Garsia entropy *2023*
Grade 2 indicates "a very good essay that contains original results that are sufficient for a publication of high quality".

German Academic Scholarship Foundation (Studienstiftung)
Student scholarship *2018–2020*
Awarded to less than 0.5% of German students.

Germany Scholarship (Deutschlandstipendium)
Student scholarship *2017*
Awarded based on academic success and leadership potential.

Research Stays (one month and longer)

Research semester on "Interactions between Fractal Geometry, Harmonic Analysis, and Dynamical Systems" (6 weeks)
Mittag-Leffler Institute, Stockholm, Sweden *Fall 2026*

Research trimester on "Boolean Analysis in Computer Science" (9 weeks)
Hausdorff Institute, Bonn, Germany *Fall 2024*

Talks

Conference and workshop talks

A geometric approach to counting rationals near curves
Cardiff University, UK *April 2026*
British Mathematical Colloquium

A geometric approach to counting rationals near planar curves
University of Maryland, USA *September 2025*
Workshop "Recent Developments in Sparse Equidistribution"

The density of rational points near hypersurfaces (after J.-J. Huang)
Hausdorff Center for Mathematics, Bonn, Germany *September 2025*
Kopp Summer School "Discrete Directions in Harmonic Analysis"

On the Fourier decay of inhomogeneous self-similar measures
University of Manchester, UK *September 2024*
Workshop "Dynamical Systems, Number Theory, and Quantum Chaos: New Connections and Directions"

Entropy rates in fractal geometry
Mathematisches Forschungsinstitut Oberwolfach, Germany *June 2023*
Workshop 2323 "Incidence Problems in Harmonic Analysis, Geometric Measure Theory, and Ergodic Theory"

Seminar talks

A duality principle and its applications to bounding the density of rational points near curves and hypersurfaces
Mittag-Leffler Institute, Stockholm, Sweden *November 2026*
Seminar of the research programme "Interactions between fractal geometry, harmonic analysis, and dynamical systems"

Curves, combinatorics, and the exact overlaps conjecture
University of St Andrews, UK *November 2025*
Analysis Seminar

Sparse equidistribution of horocycle orbits on quotients of $\mathrm{PSL}_2(\mathbb{R})$
University of Warwick, UK *May 2025*
Analysis Seminar

Sparse equidistribution of horocycle orbits on quotients of $\mathrm{PSL}_2(\mathbb{R})$
University of York, UK *April 2025*
Number Theory Seminar

The dimension of random subsets of Cantor sets defined by tree branching
University of Edinburgh, UK *October 2024*
Analysis Seminar

Entropy rates in fractal geometry
University of Warwick, UK *February 2023*
Dynamics and Group Geometry Early Researchers Seminar

Maximal dimension for Bernoulli convolutions with transcendental parameter
The Hebrew University of Jerusalem, Israel *May 2022*
Dynamics Lunch Seminar

Further Conferences and Workshops Attended

Smooth Dynamics, Random Walks, and Fractal Geometry: New Connections and Directions
Mittag-Leffler Institute, Stockholm, Sweden *June 2026*

York 25: Workshop on Diophantine Approximation
University of York, UK *June 2025*

Geometry and Fractals under the Midnight Sun
University of Oulu, Finland *June 2024*

Fractals and Related Fields IV (poster)
Porquerolles, France *September 2022*

Rényi 100: Conference Celebrating the 100th Anniversary of Alfréd Rényi's Birth
Hungarian Academy of Sciences, Budapest, Hungary *June 2022*

Refereeing

Journal of the London Mathematical Society, *Revista Matemática Iberoamericana*.

Other

Bridge: Member of the German national junior team (2013–2022). European U26 Pairs Champion (2018); several further European and World youth championship medals and placings. Youth editor of the German Bridge Magazine (2015–2020).