CV: ROOPE JOHANNES ANTTILA

Date: February 13, 2026
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EDUCATION

University of Oulu *09/2021 – 06/2025*
Doctor of Philosophy, PhD *Oulu, Finland*
Doctoral Programme of Mathematical Sciences

Principal Supervisor: Prof. Ville Suomala
Secondary Supervisor: Prof. Antti Käenmäki
Dissertation: Assouad dimensions and local structure of fractal sets and measures

University of Oulu *06/2020 – 07/2021*
Master of Science, MSc *Oulu, Finland*
Degree Programme of Mathematical Sciences

Major: Mathematics (grade 5/5)
Master's Thesis: On multifractal analysis and local dimensions of measures (grade 5/5)

University of Oulu *09/2017 – 06/2020*
Bachelor of Science, BSc *Oulu, Finland*
Degree Programme of Mathematical and Physical Sciences

Major: Mathematics (grade 5/5)
Minor: Information Processing Science (grade 5/5)
Bachelor's Thesis: Normal numbers

WORK EXPERIENCE

University of St Andrews 09/2025 – present
Research Fellow *St Andrews, Scotland*

· Post-doctoral Fellowship funded by Professor Jonathan Frasers EPSRC Open Fellowship "A new theory of dimension interpolation".

University of Oulu 09/2021 – 08/2025
Doctoral Researcher *Oulu, Finland*

· Research towards a doctoral degree in mathematics.
· Published four papers in high quality peer-reviewed journals.
· Worked as a teaching assistant in multiple courses and lectured one course.

Nokia 05/2021 – 08/2021
Trainee *Oulu, Finland*

· Test automation software development with Python.
· Tools and technologies included Linux, Python, Git, Docker, Django and ElasticSearch.

University of Oulu 09/2020 – 03/2021
Teaching Assistant *Oulu, Finland*

· Worked as a teaching assistant in three first year courses in mathematics.
· Tutored the students on the problems and participated in the grading.

University of Oulu 06/2020 – 08/2020
University Trainee *Oulu, Finland*

· Undergraduate research in the Research Group of Fractal Geometry.
· The research was focused on local multifractal analysis in metric spaces.

PUBLICATIONS

I have authored **8** articles, **5** of which have been published and **3** submitted.

Submitted

[8] R. Anttila and M. Myllyoja, "Dvoretzky covering problem for general measures," Preprint available at arXiv:2601.11470, 2025.
[7] R. Anttila, S. Eriksson-Bique, and A. Pyörälä, "Quasisymmetric mappings on two variants of fractal percolation," Preprint available at arXiv:2510.06900, 2025.
[6] R. Anttila and A. Rutar, "Fibre stability for dominated self-affine sets," Preprint available at arXiv:2412.06579, 2024.

Published

[5] R. Anttila and V. Suomala, "Multifractal analysis for the pointwise Assouad dimension of self-similar measures," *Indiana Univ. Math. J.*, vol. 74, no. 6, pp. 1721–1748, 2025. DOI: 10.1512/iumj.2025.74.60595.
[4] R. Anttila, B. Bárány, and A. Käenmäki, "Level sets of prevalent Hölder functions," *Proc. Am. Math. Soc.*, published electronically, 2025. DOI: 10.1090/proc/17045.
[3] R. Anttila, B. Bárány, and A. Käenmäki, "Slices of the Takagi function," *Ergodic Theory Dyn. Syst.*, vol. 44, no. 9, pp. 2361–2398, 2024. DOI: 10.1017/etds.2023.117.
[2] R. Anttila, "Pointwise Assouad dimension for measures," *Proc. R. Soc. Edinb., Sect. A, Math.*, vol. 153, no. 6, pp. 2053–2078, 2023. DOI: 10.1017/prm.2022.83.
[1] R. Anttila, "Local entropy and L^q-dimensions of measures in doubling metric spaces," *PUMP J. Undergrad. Res.*, vol. 3, pp. 226–243, 2020. DOI: 10.46787/pump.v3i0.2434.

TEACHING

I have **lectured** the following course at the University of Oulu.

- Matrix Theory (800693S)

I have been a **teaching assistant** in the following courses at the University of Oulu.

- Integral Calculus (800102P), Fall 2024
- Real Numbers and Limits (802302A), Fall 2024
- Differential Calculus (800101P), Fall 2024
- Functions and Approximation (802102P), Spring 2023, Spring 2024, Spring 2025
- Linear Algebra (802320A), Spring 2022
- Algebraic Structures (802355A), Fall 2021, Fall 2022
- Integrals (800318A), Spring 2021
- Introduction to Mathematical Deduction (802151P), Fall 2020
- Functions and Limits (800119P), Fall 2020
- Matrices and Optimisation for Economists (802160P), Spring 2019

- Mathematics for Economists (802158P), Spring 2019

TALKS

I have given **14** scientific talks and presented **3** posters about my research in various events including the following:

- Finnish Mathematical Days, 09.01.2026, University of Jyväskylä, Finland
- St Andrews Pure Mathematics Colloquium, 24.09.2025, University of St Andrews, Scotland
- St Andrews Analysis Seminar, 25.11.2025, 19.03.2024, University of St Andrews, Scotland
- Jyväskylä Analysis Seminar, 27.11.2024, University of Jyväskylä, Finland
- Oulu Analysis Seminar, 07.11.2024, 19.01.2024, 10.02.2023, 05.04.2022, University of Oulu, Finland
- Geometry of Deterministic and Random Fractals II, 04.09.2024, Rényi Institute, Budapest, Hungary
- AGENT Forum, 16.05.2024, University of Jyväskylä, Finland
- Fractal Geometry workshop, 04.07.2023, ICMS, Bayes Centre, Edinburgh, Scotland
- Thermodynamic Formalism: Non-additive Aspects and Related Topics, 18.03.2023, Bedlewo Conference Center, Poland
- Workshop on affine and overlapping iterated function systems, 11.05.2022, University of Bristol, England

GRANTS

travel grant (4400 €)	Vilho, Yrjö & Kalle Väisälä foundation: November 11, 2023. A travel grant for a research visit to the University of St Andrews, Scotland between February and April 2023.
doctoral training grant (48000 €)	Magnus Ehrnrooth foundation: March 8, 2023. Used to fund doctoral studies at the University of Oulu for the period 01.08.2023–31.08.2025.
doctoral training grant (24000 €)	Magnus Ehrnrooth foundation: March 6, 2022. Used to fund doctoral studies at the University of Oulu for the period 01.07.2022–31.07.2023.
travel grant (1000 €)	UniOGS: March 4, 2022. A travel grant for the conference *Fractals and Related Fields IV* at Porquerolles, France in September of 2022.

ACADEMIC SERVICE

- Referee for *Real. Anal. Exch., Contemp. Math., Topol. Its Apl., Qual. Theory Dyn. Syst., J. Funct. Anal.*
- 2024–2025: Co-founder of the *Early Career Research Forum (ERF)* of the Research Unit of Mathematical Sciences at the University of Oulu.
- 2024: Co-organiser of the conference *Geometry and Fractals under the Midnight Sun* at the University of Oulu.

VOLUNTARY WORK

Mathematics Study Representative 01/2019 - 12/2020
Sigma-kilta ry *Oulu*

- Participated in the board meetings of Sigma-kilta ry, the student organisation of the mathematics and physics students at the University of Oulu.
- Represented the students in the Degree Program Committee of the Mathematical Sciences.
- Organised events related to studies, such as a feedback day in collaboration with the Research Unit of Mathematical Sciences, as well as a study trip to the University of Jyväskylä.

Student Tutor 09/2018 - 12/2018
University of Oulu *Oulu*

- Worked as a tutor of a group of around 15 students as they began their studies at the University of Oulu.

IT-SKILLS

Typesetting	LaTeX(excellent)
Programming	Python (excellent) MATLAB (excellent) C++ (good) C,C# (basics) JavaScript, HTML, CSS (basics)

LANGUAGES

Finnish	Native
English	Fluent
Swedish	Basics

REFERENCES

Antti Käenmäki
University Lecturer, University of Eastern Finland
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Phone: +358 50 336 4715

Ville Suomala
Professor, University of Oulu
Email: ville.suomala@oulu.fi
Phone: +358 50 350 5284