



# RAREȘ ANGHEL-STAN

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www.rares-stan.ro

## WORK EXPERIENCE

<b>Assistant Researcher</b>	December 2020 – Present
Mathematics Institute of the Romanian Academy	Bucharest, Romania
• Member in the Grant <i>Volumes of hyperbolic and Einstein manifolds</i> .	2021 – 2023
• Member in the Grant <i>Conformal Aspects of Geometry and Dynamics</i> .	2024 – Present
<b>Software Engineer</b>	June 2023 – March 2024
Diomedes-technologies (high-frequency trading firm)	Bucharest, Romania
• Managed and improved several trading systems, developed automated processes to streamline data handling.	
• Technical skills: <b>Python, SQL, SQLAlchemy, Git, Bash, Grafana, gRPC</b> .	

## EDUCATION

<b>PhD, Mathematics</b>	November 2019 – June 2024
Mathematics Institute of the Romanian Academy	Bucharest, Romania
Thesis title: <i>Spectral and algebraic methods in the study of differential manifolds</i> .	
<b>Master Degree, Mathematics</b>	October 2017 – July 2019
University of Bucharest – Department of Mathematics and Computer Science	Bucharest, Romania
Graduated with grade 9.75/10 ranking amongst top 3% of all students.	
<b>Bachelor's Degree, Mathematics</b>	October 2014 – July 2017
University of Bucharest – Department of Mathematics and Computer Science	Bucharest, Romania
Graduated with grade 10/10.	

## PUBLICATIONS

- *The Selberg trace formula for spin Dirac operators on degenerating hyperbolic surfaces*.  
To appear in **Documenta Mathematica**, available at [arxiv.org/abs/2212.11793](https://arxiv.org/abs/2212.11793).
- *Spectral convergence of the Dirac operator on typical hyperbolic surfaces of high genus* (with Laura Monk).  
Published in **Annales Henri Poincaré** (2024), available at [link.springer.com/article/10.1007/s00023-024-01452-z](https://link.springer.com/article/10.1007/s00023-024-01452-z).
- *Uniformization of Riemann Surfaces Revisited* (with Cipriana Anghel).  
Published in **Annals of Global Analysis and Geometry** 62, 603—615 (2022), available at [arxiv.org/abs/2008.12189](https://arxiv.org/abs/2008.12189).

## PREPRINTS

- *Spin structures and class functions on Fuchsian groups*.  
Available upon request.

## HONORS AND AWARDS

<b>Bitdefender Scholarship</b>	2020
Merit based scholarship awarded to two PhD students at the Mathematics Institute.	
<b>Anghelescu Scholarship</b>	2017
Recognition for up to 3 students at University of Bucharest – Department of Mathematics.	
<b>Bronze medal at IMC</b>	2016
International Mathematics Competition for University Students.	
<b>Silver medal at SEEMOUS</b>	2016
South Eastern European Mathematical Competition for University Students.	

**Gold medal at the Romanian Mathematical Olympiad**  
National level Mathematical Olympiad.

2014

## CO-ORGANIZATION OF SCIENTIFIC EVENTS

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### **Brownian motion to Black-Scholes**

2023

Co-Organized with Claudiu Mîndrilă.

- We provided a self-contained introduction to the concepts of Brownian motion and the Black-Scholes equation, with a focus on their applications in finance. We mainly followed Stochastic Calculus for Finance II (Continuous-Time Models) by S. E. Shreve.
- Lecture notes can be found at: [www.rares-stan.ro/brownian-motion-to-black-scholes](http://www.rares-stan.ro/brownian-motion-to-black-scholes).

## SELECTED TALKS

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- Seminar talk *Selberg zeta functions on degenerating 2- and 3-dimensional hyperbolic manifolds.* December 2024  
Oberseminar Analysis/Numerik, Oldenburg.
- Seminar talk *Uniform Weyl laws and zeta functions on degenerating hyperbolic surfaces.* October 2024  
Oberseminar Topology-Geometry, Göttingen.
- Seminar talk *Weyl's law on typical surfaces.* March 2024  
Geometry seminar, IMAR.
- Seminar talk *Uniform Weyl's law on degenerating surfaces.* April 2023  
Oberseminar Geometry and Topology, University of Göttingen.
- Seminar talk *Uniformization of Riemann surfaces revisited.* February 2023  
Analysis Reading Group seminar, University of Bristol.
- Seminar talk *Selberg zeta function for the Dirac operator on degenerating hyperbolic surfaces.* July 2022  
Geometry seminar, University of Regensburg.
- Workshop talk *Jacobi fields and the Anosov property of the geodesic flow.* June 2022  
Entropy of semiclassical measures Workshop, Les Plantiers.
- Workshop talk *WKB expansions of solutions of the Schrödinger equation.* November 2021  
Semiclassical Trace Formula Workshop, Rambouillet.

## CONFERENCES

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- Facets of mathematics: discrete, smooth, and singular, Oldenburg. October 2024
- Winter School Aussois 2022, Aussois. December 2022
- Random walks and related random topics, Göttingen. October 2022
- Geometry and Analysis on Non-Compact Manifolds, CIRM, Marseille. March 2022
- Heidelberg Laureate Forum, Heidelberg. September 2018

## TEACHING EXPERIENCE

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- First year Analysis tutorial, University of Bucharest. 2020 – 2021
- Tutorial for Complex Analysis and Riemann Surfaces, University of Bucharest 2019 – 2020

## SKILLS AND LANGUAGES

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**Languages:** Romanian (Native), English (C1), German (B1), French (A1).

**Programming:** Python, SQL, Javascript, C#, MATLAB.

## HOBBIES AND OTHER ACTIVITIES

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Organizing a book club ([www.rares-stan.ro/book-club](http://www.rares-stan.ro/book-club)), playing Chess, Hiking.