



RAREȘ ANGHEL-STAN

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MISSION STATEMENT

As a mathematician with experience as software engineer, I am driven by the pursuit of excellence. My mission is to seamlessly blend analytical rigour with technical proficiency, crafting intelligent solutions to real-world challenges. Leveraging my rich background in mathematics and expertise in software development, I am dedicated to ongoing growth and innovation, aiming to explore new possibilities and expand my skills.

WORK EXPERIENCE

Software Engineer

June 2023 – March 2024

Diomedes-technologies (high-frequency trading firm)

Bucharest, Romania

- Diomedes ranks amongst the top 50 companies worldwide specializing in cryptocurrency trading.
- Managed and improved several trading systems, adapting to the unpredictable nature of the trading environment, and regularly tackling new challenges as they emerged.
- Gained insight into the business operations by visualizing extensive datasets for our research team, utilizing my statistical skills to synthesize the information. This allowed for in-depth analysis of profit and losses, system latencies, and network latencies, thereby enabling informed decision-making and strategic planning.
- Developed automated processes to streamline data handling for cryptocurrency instruments, resulting in significant time savings and improved data management efficiency.
- Technical skills: **Python, SQL, SQLAlchemy, Git, Bash, Grafana, gRPC, ML.**

Assistant Researcher

December 2021 – Present

Mathematics Institute of the Romanian Academy

Bucharest, Romania

- The Mathematics Institute of the Romanian Academy is the leading mathematical institution in Romania, ranking amongst the top 3 research institutions at the national level.
- Publications:
 - *The Selberg trace formula for spin Dirac operators on degenerating hyperbolic surfaces*, arxiv.org/abs/2212.11793, to appear in: **Documenta Mathematica** (ranks amongst top 15% Mathematical journals worldwide).
 - *Spectral convergence of the Dirac operator on typical hyperbolic surfaces of high genus* (with Laura Monk), arxiv.org/abs/2307.01074, to appear in: **Annales Henri Poincaré** (ranks amongst top 20% Mathematical Physics journals worldwide).
 - *Uniformization of Riemann surfaces revisited* (with Cipriana Anghel), arxiv.org/abs/2008.12189, **Annals of Global Analysis and Geometry** (ranks amongst top 40% Mathematical journals worldwide).
- Selected invited talks:
 - *The Selberg trace formula for spin Dirac operators on degenerating hyperbolic surfaces*, Geometry and Topology Oberseminar, University of Göttingen, 2023.
 - *The uniformization theorem*, Analysis Reading Group seminar, University of Bristol, 2023.
 - *The Selberg trace formula for spin Dirac operators*, Geometric seminar, University of Regensburg, 2022.
- Conferences and summer schools:
 - Random walks and related random topics, Göttingen, 2022.

- Geometry and Analysis on Non-Compact Manifolds, CIRM, Marseille, 2022.
- Heidelberg Laureate Forum, 2018 (I was selected amongst 200 young researchers to spend a week with the recipients of the Abel Prize, Turing Award, ACM Prize, and Fields Medal).
- Organized a semester seminar with over 14 meetings providing a self-contained introduction to **Brownian motion** and the **Black-Scholes equation**, with a focus on their applications to finance.
- Teaching assistant for the courses **Real Analysis** and **Riemann Surfaces** at University of Bucharest.

EDUCATION

PhD, Mathematics	November 2019 – Present
Mathematics Institute of the Romanian Academy	Bucharest, Romania
Thesis title: Spectral and algebraic methods in the study of differential manifolds.	
Expected defense date: June 2024 .	
Master Degree, Mathematics	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.	
Bachelor's Degree, Mathematics	October 2014 – July 2017
University of Bucharest – Department of Mathematics and Computer Science	Bucharest, Romania
Graduated with grade 10/10.	

PERSONAL PROJECTS

Developed an e-learning platform (rezigo.ro)	January 2020 – December 2021
Frontend code: github.com/rarestan/rezigo_v2	
<ul style="list-style-type: none"> • Co-managed a team of five members, playing a key role in the successful launch of a website tailored for medical school graduates in Romania to prepare for their final exams, attracting approximately 1000 users annually. Played a major role in the development of the website and in the integration of the payment process, resulting in over 100 successful payments to-date. • Technical skills: JavaScript, Git, React, SQL, CSS, C#, Stripe. 	

HONORS AND AWARDS

Bitdefender Scholarship	2020
Merit based scholarship awarded to two PhD students at the Mathematics Institute.	
Anghelescu Scholarship	2017
Recognition for up to 3 students at University of Bucharest – Department of Mathematics.	
Bronze medal at IMC	2016
International Mathematics Competition for University Students.	
Silver medal at SEEMOUS	2016
South Eastern European Mathematical Competition for University Students.	
Gold medal at the Romanian Mathematical Olympiad	2014
National level Mathematical Olympiad.	

SKILLS AND LANGUAGES

Languages: Romanian (Native), English (C1), German (A2), French (A1).
Programming: Python, SQL, Javascript, C#, R, MATLAB, Mathematica.
Document Creation: Microsoft Office Suite, LaTeX, Markdown.

HOBBIES AND OTHER ACTIVITIES

Organizing a book club (www.rarestan.ro/book-club), playing Chess, Hiking.