

VLAD DUMITRU MĂRGĂRINT

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Current position and research visits

2019-2021
2020

Postdoctoral Fellow at NYU Shanghai.
Long research visit at Max Planck Institute, Leipzig.

Education and Appointments

2018-2019

Appointed as Research Assistant of Prof. Dmitry Belyaev under the EPSRC Grant EP/M002896/1.

10/2015-08/2019

University of Oxford, Oxford, United Kingdom

Pursuing a DPhil in Mathematics under the supervision of Prof. Dmitry Belyaev and Prof. Terry Lyons in *Schramm-Loewner evolutions and Rough Paths Theory* under Terry Lyons's Grant: ERC No.291244 Esig, University of Oxford.

09/2013 - 09/2015

ETH Zürich, Zürich, Switzerland

Graduated Master of Science in Mathematics supervised by Prof. Dr. Antti Knowles.

10/2010 - 06/2013

University of Bucharest, Faculty of Mathematics, Bucharest, Romania

Graduated Bachelor's in Mathematics supervised by Prof. Dr. Victor Vuletescu.
Thesis: "Differential Geometry and General Relativity".

Publications, preprints and work in preparation

6. "The maximal convergence rate for the Taylor approximations of the Loewner Differential Equation" *with Terry Lyons and James Foster*
5. "Sequential continuity in κ of the welding homeomorphisms induced by the backward SLE_κ for $\kappa \in [0, 8/3]$ " *with Dmitry Belyaev, Terry Lyons and Atul Shekhar*
4. "On the uniqueness and non-uniqueness of solutions the backward Loewner differential equation started from the origin in the upper half-plane, using the information on the real line - Analysis of Bessel processes and the structure of SLE traces" *with Dmitry Belyaev and Terry Lyons*
3. "Closed form expression of the stationary law and random ergodic averages convergence for a diffusion process connected with the SLE trace - The explicit law of the tip of SLE trace at random times. " *with Terry Lyons and Sina Nejad*
2. "Proof of the Weak Local Law for Wigner Matrices using Resolvent Expansions"-submitted, 2018
1. "Convergence of Quantum Diffusion in a Random Band Matrix Model" *Journal of Statistical Physics*, 2018

Academic Awards

2019

St. John's College Oxford Travel Scholarship.

2018

James Fund Travel Scholarship.

2017-2018

Mathematical Institute Department Award, £7000, University of Oxford.

2016

St. John's College Travel Scholarship.

2016

3rd Prize in the Posters Presentations at the UK meeting in Probability, Lancaster University.

2015-2018

EPSRC 1657722 Studentship, University of Oxford.

2014-2015

ETH Zürich Master's scholarship for academic achievement.

2013	Finalist (top 5) at Romanian Student of the year 2013 offered by the Romanian Academy.
2012-2013	Young Researcher Performance Scholarship awarded by the University of Bucharest for the highest undergraduate achievement and research potential.
06/2012 - 09/2012	Dean's Summer Student Scholarship offered by the Physics Department of UCL. Supervisors: Prof. Filipe Abdalla, Prof. Jason McEwen(UCL). I developed algorithms in Matlab for implementing Shapelets mathematical formalism and integrated them in the Compressive Sensing solver.
2010	Bronze Medal -International Olympiad of Astronomy and Astrophysics, China.
2009	Silver Medal -International Olympiad of Astronomy and Astrophysics, Iran.
2009-2010	Member of the extended team of Romania for the International Physics Olympiad (IPhO) in 2009 and 2010.

Presentations

01/2020	Invited Talk at the Analysis Seminar -Max Planck Institute -Leipzig.
09/2019	Invited Talk at the Probability Seminar - NYU Shanghai.
08 /2019	Invited mini-course at TU Berlin from the work of my PhD Thesis.
07/2019	Invited Talk at the "The 20th INFORMS Applied Probability Society Conference"-Brisbane Australia.
06/2019	Invited Talk at the Workshop of Young Romanian Researchers in Mathematics-University of Bucharest.
01/2019	Invited Talk at the Probability Seminar-Bielefeld University.
07/2018	Invited Talk at the Summer School "Geometry and scaling of random structures", Buenos Aires, Argentina.
06/2018	Invited Talk at the 9th Oxford-Berlin meeting.
06/2018	Contributed Talk at "Stochastic Processes and Applications" (SPA), Gothenburg, Sweden.
06/2018	Invited Talk at the conference "Conformal Random Geometry and Related Fields", KIAS, Seoul, South Korea.
04/2018	Invited Talk at the "Pathwise SLE Meeting", TU Berlin.
10/2017	Invited Talk at the 8th Oxford-Berlin Meeting, Oxford, United Kingdom.
10/2017	Invited Talk at the Seminar of Stochastic Analysis, University of Oxford.
04/2017	Invited Talk at the workshop "Afternoon meeting in Rough Paths Theory", University of Reading, United Kingdom.
08/2016	Invited Talk at the 5th Oxford-Berlin Meeting, Berlin, Germany.
07/2016	Contributed Talk at the World Congress of Probability, Toronto, Canada.
06/2016	Contributed Talk at the Research Students Conference, Dublin, Ireland.
06/2016	Poster Presentation at the 3rd BCN Summer School on Stochastic Analysis, Barcelona, Spain.
04/2016	Poster Presentation at the UK Easter Probability Meeting, Lancaster University, United Kingdom.

Teaching experience

NYU Shanghai	Mathematical Institute: Calculus I (Fall 2019).
University of Oxford	Nominated for the University prize "Student-Led Teaching Award".
University of Oxford	Mathematical Institute: Revision classes for Stochastic Differential Equations (Spring 2017), Applied Probability (Spring 2017); Tutor for: Distribution Theory and Fourier Analysis (Winter 2018), Statistics and Data Analysis (Spring 2017, Spring 2018), Statistical Mechanics (Winter 2017), Continuous Martingales and Stochastic Calculus (Spring 2017), Complex Analysis: Conformal maps and Geometry (Winter 2017), Applied Probability (Winter 2017), Stochastic differential equations (Winter 2017), Numerical Analysis (Spring 2016);

ETH Zürich

Teaching Assistant for Master courses: Complex Analysis: Conformal maps and Geometry (Spring 2017), Stochastic Analysis and PDE's (Spring 2016), Approximations of functions (Winter 2015);

Mathematics Department:

Teaching Assistant for Methods of Mathematical Physics II (Spring 2015), Analysis I (Fall 2014), Analysis II (Spring 2014).

Service and Organization

2019
2017-2018

Referee for Electronic Journal of Probability.

Extension of the contract for Academic Assistant for Prof. Jan Obłój at St. John's College:

Organization committee for the one-week Conference **Robust Techniques in Quantitative Finance, Oxford, September 2018**; marking collections in Probability and Statistics, giving tutorials in Statistics, writing various codes for simulations.

2016-2017

Academic Assistant for Prof. Jan Obłój at St. John's College:

Organizing a database in Papers, marking collections in Probability and Statistics, giving tutorials in Statistics, organizing the corrections of a submitted paper, writing various codes for simulations.

12/2017

Member of the organizing committee of the 8th Oxford-Berlin meeting

The workshop took place in Oxford and gathered researchers working on Rough Paths Theory and Regularity Structures.

11/2017

Member of the selection committee for undergraduate admissions at St. John's College, Oxford

04/2017

Member of the committee for a Master's Thesis

Examiner of Patrick Kidger's Master Thesis "Polynomial Approximations of Holomorphic Functions" at the University of Oxford.

12/2016

Member of the organizing committee of the 6th Oxford-Berlin meeting

03/2016

Preparation for the International Olympiad of Astronomy and Astrophysics

Training the team for the theoretical exam of the International Olympiad of Astronomy and Astrophysics 2016 by solving various Physics and Celestial Mechanics problems.

Working Seminars presentations

05/2018

Talk at the Reading Group on "Random Planar Waves": Local statistics of lattice points on the sphere by Jean Bourgain, Peter Sarnak and Zev Rudnick: .

03/2018

Talk at the Reading Group "Theory of Regularity Structures": Wick products and renormalization in Regularity Structures.

11/2017

Talk at the Reading Group "Theory of Regularity Structures": Schauder estimates in PDEs and Regularity Structures.

04/2017

Talk at the Oxford Junior Probability Seminar: SLE with Rough Paths Theory.

06/2017

Talk at the Oxford Junior Probability Seminar: Quantum Diffusion and Random Matrix Theory.

04/2016

Talk at the Reading Group "Machine Learning and Rough Paths": Kernel methods in Machine Learning.

Outreach and Public Engagement

2017

Talk at the The Invariants : "An evening flight over two modern Mathematical Theories: Random Fractal Planar Curves and Rough Paths Theory."

2017

Talk at the Oxford Research Forum (organized by the Oxford Romanian Society): Probabilistic and deterministic modelling of "reality" (Markov Chains, Brownian motion and the study of the Brownian Motion Paths in Rough Paths Theory).

2017	Mentor for Romanian Students studying Mathematics on United Kingdom Universities via LSRS mentoring scheme (a program designed by an NGO to help Romanian students integrate and receive advice from experienced mentors).
2018	Mini-Course at the one-week Oxford for Romania Summer School in “Fractals”.
2017	Mini-Course at the one-week Oxford for Romania Summer School in “Examples and Counter-Examples in Analysis”, based on the book of Bernard R. Gelbaum, John M. H. Olmsted “Counterexamples in Analysis”.
2016	Mini-Course at the one-week Oxford for Romania Summer School in “Basic ideas in Differential Geometry”.
2015	Talk at the Oxford Research Forum (organized by the Oxford Romanian Society): Mathematical Theorems on Randomness (Survey talk: Probability and open questions in Random Matrix Theory).
2014	National TV-Series: “Road to Success” interviewed in Season 1, Episode 1.
2012	Second prize and public favorite in the Romanian National Finals-Famelab 2012- presenting “The Universe between Mathematics and Magic- the Gauss Egregium Theorem”.

Summer Schools attendences

07/2018	“Geometry and Scaling of Random Structures” , UBA, Buenos Aires, Argentina
06/2018	“Random Conformal Geometry and Related Fields” , KIAS, Seoul, South-Korea
06/2017	“Cambridge Workshop on Random Geometry” , University of Cambridge, UK
06/2016	“3rd BCN Summer School on Stochastic Analysis” , Summer School at CRM, Barcelona, Spain
07/2014	“Mathematical Physics, Analysis and Stochastics” , Summer School at the Universität Heidelberg, Germany
07/2014	“Feynman amplitudes in the 21st century” , Clay Institute of Mathematics Summer School at ICMAT, Madrid, Spain
09/2013	“Summer School and Workshop on Random Matrices and Growth Models” , ICTP, Trieste, Italy

Extracurricular Activities

2011-2013	President of the Association of Mathematics Students, University of Bucharest Organized charitable events, tutoring hours in Mathematics, student-oriented events (orientation tours, academic guidance, etc.) and promoted students rights in official meetings with the authorities.
2010-2013	Member in the National Committee of the National Olympiad of Astrophysics Responsible for proposing problems to be solved in the contest for the Theoretical, Data Analysis and Observational parts; participated in the jury and graded papers.
2007-2011	President of the Scientific Department for the “Step Towards Infinity” magazine (within membership of Sirius Astronomical Association-UNESCO) Tutored students for the National Olympiad of Astrophysics and directed the scientific activity of the association.

Skills and Interests

Languages:	<i>Romanian:</i> mother tongue. <i>English:</i> fluent (TOEFL iBT Score 102/120). <i>French:</i> intermediate knowledge. <i>Spanish:</i> intermediate knowledge. <i>Chinese:</i> Basic Knowledge (Attending Beginners Classes offered by NYU Shanghai).
IT and Data Skills:	<i>Operating Systems:</i> Linux, Windows. <i>Programming:</i> Matlab (advanced level), Python, R (medium level). <i>Others:</i> L ^A T _E X, Wolphram Mathematica, Papers, Inkscape, Microsoft Office.
Other Interests:	Arts, Football, Tennis. Research oriented discussions and debate events.

References

Academic:

1. Prof. Dmitry Belyaev, University of Oxford: belayev@maths.ox.ac.uk;
2. Prof. Terry Lyons, University of Oxford: lyons@maths.ox.ac.uk;
3. Prof. Antti Knowles, University of Geneva: Antti.knowles@unige.ch;
4. Prof. Filipe Abdalla, University College London: fa@star.ucl.ac.uk;

Service and teaching:

5. Prof. Jan Obłój, University of Oxford: obloj@maths.ox.ac.uk.