
VLAD DUMITRU MĂRGĂRINT

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Education

- 10/2015-** **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*.
- 09/2013 - 09/2015** **ETH Zürich, Zürich, Switzerland**
Graduated Master of Science in Mathematics.
Master Thesis: “Proof of the Weak Local Law for Wigner Matrices using Resolvent Expansions”.
Research-project: “Quantum Diffusion in a Random Band Matrix Model”.
Supervisor for both projects: Prof. Dr. Antti Knowles (ETH Zürich).
- 10/2010 - 06/2013** **University of Bucharest, Faculty of Mathematics, Bucharest, Romania**
Graduated Bachelor’s in Mathematics.
Thesis: “Einstein’s Theory of Relativity”.
Supervisor: Prof. Dr. Vuletescu Victor (University of Bucharest).

Undergraduate and Graduate Research Projects

- 03/2015-08/2015** **Master Thesis “Proof of the Weak Local Law for Wigner Matrices using Resolvent Expansions”**
Supervisor: Prof. Dr. Antti Knowles. The principal result of the Thesis is a novel proof for the Weak Local Law for Wigner Matrices using the algebraic structure given by resolvent expansions together with concentration inequalities and bootstrapping arguments. This ingredients provide an elegant and short proof of this famous result.
- 02/2014-07/2014** **Research Project in Mathematical Physics “Quantum Diffusion in a Random Band Matrix Model”**
Supervisor: Prof. Dr. Antti Knowles. The main original result is an estimate for the variance of a random variable that describes the movement of a particle that is subjected to a quantum Hamiltonian on a lattice model.
- 06/2012 - 08/2012** **Summer Scholarship at the University College London, Physics Department**
Supervisors: Prof. Filipe Abdalla, Prof. Jason McEwen(UCL). Developed algorithms in Matlab for implementing Shapelets mathematical formalism and integrated them in the Compressive Sensing solver. Obtained original results after running simulations. Created a wiki page with the project results and reported weekly the developing of research. Gave a talk at the end of the project in Ramsey auditorium.

Academic Awards and Achievements

- 2018-2019** **Research Assistant under the EPSRC Grant EP/M002896/1.**
- 2018** **James Fund Travel Scholarship.**
- 2017-2018** **Mathematical Institute Department Award, University of Oxford.**
- 2016** **3rd Prize in the Posters Presentations at the UK meeting in Probability, Lancaster University.**

2015-2018 **EPSRC 1657722 Studenship, University of Oxford.**
 2015-2017 **ERC No.291244 Esig Studenship, 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.
 06/2012-08/2012 **Dean's Summer Student Scholarship** offered by the Physics Department of UCL.
 2010 **Bronze Medal** winner-International Olympiad of Astronomy and Astrophysics, China.
 2009 **Silver Medal** winner-International at the Olympiad of Astronomy and Astrophysics, Iran.
 2009-2010 Member of the extended team of Romania for the International Physics Olympiad in 2009 and 2010.

Teaching experience

University of Oxford **Mathematical Institute:**
Revision classes for Stochastic Differential Equations (TT 2017), Applied Probability (TT 2017);
Tutor for Part C Statistical Mechanics (MT 2018), Statistics and Data Analysis (TT 2017, TT 2018), Continuous Martingales and Stochastic Calculus (HT 2017), (separate class) Complex Analysis: Conformal maps and Geometry (MT 2017), Applied Probability (MT 2017), Stochastic differential equations (MT 2017), Numerical Analysis (HT 2016);
Teaching Assistant for Part C (Master's) courses: Complex Analysis: Conformal maps and Geometry (MT 2017), Stochastic Analysis and PDE's (HT 2016), Approximations of functions(MT 2015);
ETH Zürich **Mathematics Department:**
Teaching Assistant for Methods of Mathematical Physics II (Spring 2015), Analysis I (Fall 2014), Analysis II (Spring 2014).

Presentations

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 Conference, Gothenburg, Sweden.
 - **Invited Talk** at the Department Colloquium, University of Oxford.
 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.

Service and Organization

2017-2018 **Extension of the contract for Academic Assistant for Prof. Jan Oblój 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 Oblój 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

One of the organizers of the 8th Oxford-Berlin meeting

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

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 presentation

Examiner of a Master's student at the University of Oxford, who wrote a Thesis on 'Polynomial Approximations of Holomorphic Functions'.

12/2016

One of the organizers of the 6th Oxford-Berlin meeting

03/2016

Preparation for the International Olympiad of Astronomy and Astrophysics

Preparing the team for the Theoretical Exam of the International Olympiad of Astronomy and Astrophysics 2016 by solving various Physics and Celestial Mechanics Problems.

Summer Schools attendences

07/2018

Geometry and Scaling of Random Structures, KIAS, 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

Attended lectures in advanced topics on current research in Regularity Structures and SPDE's.

07/2014

"Mathematical Physics, Analysis and Stochastics", Summer School at the Universität Heidelberg, Germany

Attended lectures in advanced topics on current research in Mathematical Physics including random walks and quantum many body systems.

07/2014

"Feynman amplitudes in the 21st century", Clay Institute of Mathematics Summer School at ICMAT, Madrid, Spain

Three weeks of lectures that intertwined Mathematical Physics, Topology and Algebraic Geometry.

09/2013

"Summer School and Workshop on Random Matrices and Growth Models", ICTP, Trieste, Italy

Attended two weeks of lectures and workshops in Random Matrices Theory and applications.

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).

2016

Mini-Course at the one-week Oxford for Romania Summer School in 'Intuitive aspects of Differential Geometry'.

2015

Talk at the Oxford Research Forum (organized by the Oxford Romanian Society): Mathematical Theorems and Randomness (Survey talk: Probability and open questions in Random Matrix Theory).

2014 National TV-Series: “Road to Succes” interviewed in Season 1, Episode 1.
2012 Second prize and public favorite in the Romanian National Finals-Famelab 2012-
with the presentation: “The Universe between Mathematics and Magic”.

Extracurricular Activities

2011-2013 **President of the Association of Mathematics Students, University of Bucharest**
Activity: 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**
Activity: I was 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)**
Activity: Tutored students for the National Olympiad of Astrophysics and directed the scientific activity of the association.

Skills and Interests

Languages: *Romanian:* mother tongue.
English: fluent. (TOEFL iBT Score 102/120).
French: advanced knowledge.
Spanish: advanced knowledge.

IT and Data Skills: *Operating Systems:* Linux, Windows.
Programming: Matlab (advanced level), Python, R (medium level).
Others: L^AT_EX, Wolphram Mathematica, Papers, Inkscape, Adobe Photoshop, Microsoft Office.

Other Interests: Arts, Football, Tennis. Research oriented discussions and debate events.