

CURRICULUM VITAE

Ionel POPESCU

Addresses

Universitatea București
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Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 2000-2004
Ph.D. in Pure Mathematics, June 2004
Thesis title: *Morse Inequalities, a Probabilistic Approach*
Advisor: Daniel W. Stroock
UNIVERSITY OF BUCHAREST, ROMANIA, 1997-1998
Master in Mathematics, June 1998.
UNIVERSITY OF BUCHAREST, ROMANIA, 1992-1997
Bachelor of Science in Mathematics, June 1997.

Positions

- Conferentiar Universitar, 2014-Present, Facultatea de Matematica si Informatica, Univ. Bucuresti
 - Associate Professor, 2016-Present, Georgia Institute of Technology,
 - Assistant Professor, 2007- 2016, Georgia Institute of Technology,
 - Boas Assistant Professor, 2004 - 2007, Northwestern University,
 - Scientific Researcher II, 2014 - present, Institute of Mathematics of Romanian Academy
 - Scientific Researcher III, 2006 - present, Institute of Mathematics of Romanian Academy.
 - Research Assistant, 1997 - 2006, Institute of Mathematics of Romanian Academy.
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Fields of Interest

Stochastic Analysis, Functional Analysis, Differential Geometry, Random Matrices, Free Probability, Optimal Alignment.

Grants

- Simons Foundation travel grant 2014-2019 - \$35000
 - European Union - Marie Curie grant (IRG) - *Stochastic Analysis, Mass Transportation and Free Probability*, 2010-2013, €100000
 - UEFISCDI - Romanian Young Researchers - *Randomness, Geometric Problems and Functional Inequalities*, 2011-2014, approximately \$300000. This is a team grant I managed.
 - UEFISCDI - Exploratory Workshop - *Probability and Related Aspects*, May 2012, Alba Iulia, Romania. I was the co-PI and the co-organizer of the workshop.
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Publications

- Upper bound for the rate of convergence of a second functional in optimal alignment - with Raphael Hause and Henry Matzinger - to appear in *Bernoulli*
- Shy and Fixed-Distance Coupling on Riemannian Manifolds - with Mihai N. Pascu - *Stochastic Processes and their Applications* - Volume 126, Issue 2, February 2016, Pages 628–650
- Refinements of the One Dimensional Free Poincare Inequality - with Christian Houdré - *International Mathematics Research Notices*, Issue 17, 2015, pp. 8116-8151
- A refinement of Brascamp-Lieb-Poincare inequality in one dimension - *Comptes Rendus Mathématique* volume 352, no. 1, January 2014, pp. 55–58
- A Stochastic Target Approach to Ricci Flow on Surfaces - with Robert W. Neel - *Annals of Probability*, volume 44, no. 2, Feb 2016, pp. 1341–1425
- Local One Dimensional Free Inequalities - *Journal of Functional Analysis*, volume 264, no. 6, March 2013, pp.1456–1479

- The One Dimensional Free Poincaré Inequality- with Michel Ledoux - *Transaction of AMS* volume **365**, 2013, pp. 4811–4849
- Analyticity of Planar Limits of a Matrix Model - with Stavros Garoufalidis - *Annales Henri Poincaré* volume **14**, no. 3, April 2013, pp. 499–565
- Toeplitz algebras arising from actions of \mathbb{N}^r - with Iulian Popescu - *Revue Romaine de Mathématique pure et Appliquées* - **55**, no. 3, 2010, pp. 205–240
- Mass Transportation Proofs of Free Functional Inequalities, and Free Poincaré Inequalities - with Michel Ledoux - *Journal of Functional Analysis* volume **257**, no. 4, 2009, pp. 1175–1221
- General Tridiagonal Random Matrix Models, Limiting Distributions and Fluctuations - *Probability Theory and Related Fields*, volume **144**, issue 1-2, May 2009, pp. 179–220
- Talagrand Inequality for the Semicircular Law and Energy of the Eigenvalues of Beta Ensembles - *Mathematical Research Letters*, volume **14**, issue 6, November 2007, pp. 1023–1032
- Morse Inequalities, a Function Space Integral Approach - *Journal of Functional Analysis* **235**, no. 1, 2006, 1–68,

Preprints

- Free Functional Inequalities on the Circle - accepted (pending revisions) in *Advances in Mathematics*
- Couplings of Brownian Motions of deterministic distance on the model spaces of constant curvature - with Mihai Pascu - accepted (pending revisions) in *Journal of Theoretical Probability*
- From Girsanov to gradient estimates - with Elton Hsu
- Non-normal limiting distribution for optimal alignment scores of strings in binary alphabets - with Henry Matzinger
- Concentration of Mass in One Dimensional Free Probability - with Michel Ledoux

Invited Conference Talks

- Probabilistic and Analytic tools in Convexity, AMS, March 5-6, Athens Georgia
- Miniworkshop in free probability, Tokyo, July 13-17, 2015
- New Trends in Stochastic Analysis, Kyoto, July 6-10, 2015
- New developments in Optimal Transport, Geometry and Analysis, Bonn, Feb 24th, 2015
- Stochastic Analysis and Applications, Bucharest, Dec. 17th, 2014
- ProbaGeo 2014 at Bordeaux, June 10-12, 2014
- High Dimensional Probability VII, Cargese, May 26-31, 2014
- Sectional AMS meeting, Albuquerque, April 5-6, 2014
- ProbaGeo 2013 at Luxembourg, Oct 28-31, 2013, University of Luxembourg
- 150 years anniversary of University of Bucharest, Aug. 30 - Sept. 1, 2013, Bucharest, Romania
- AMS-RMS, Probability and Other Related Fields, June 27-30 2013, Alba Iulia, Romania
- Stochastic Differential Geometry, May 29-31 2013, Rennes, France
- Heat Kernels, Stochastic Processes and Functional Inequalities, 5-11 May, 2013, Oberwolfach Germany,
- The 13th Romanian-Finnish Seminar, June 26-30, 2012, Ploiești, Romania
- Probability and Related Aspects, Alba Iulia, Romania, May 22-26, 2012
- New Trends in Modern Analysis, Probabilistic and Analytic Methods in PDEs and Spectral Theory November 20-24, 2011, Hammamet, Tunisia
- 5th International Conference on Stochastic Analysis and its Applications September 5-9, 2011, Bonn, Germany
- Congress of Romanian Mathematicians, June 29 - July 5, 2011, Brasov, Romania
- Mini Conference on Probability and Related Fields, May 23-24, 2011, Bucharest, Romania
- Workshop for Young Researchers in Mathematics May 12-13, 2011, Constanta, Romania
- The Fourth Annual Meeting of the European Non Commutative Geometry Network April 25-30, 2011, Bucharest, Romania
- Conference on Random Matrices, June 1-4, 2010, Paris
- Probability & Geometry in High Dimensions, May 17-21, 2010, Paris
- Workshop on Asymptotic Analysis and Stochastic Methods for Heterogeneous Media, June 9-13, 2010, Alba Iulia, Romania
- CMS/AMS Winter Session - Ottawa - December 5-8, 2008
- Infinite Dimensional Probability - Luminy, May 22-27, 2008
- Workshop on Random Matrices, Bonn, January 11-18, 2008

- International Workshop on "Free Probabilities, Operator Spaces and von Neumann Algebras", Sibiu, Romania, June 9-16, 2007
- 6th Operator Algebras International Conference, Bucharest, August 2005
- Joint meeting AMS-DMS-ÖMG, June 13-18, 2005, Mainz, Germany
- AMS Meeting, October 23-24, 2004 at Northwestern University in Evanston, Illinois
- Analytic and Geometric Aspects of Stochastic Processes, Banff Research Center, April 10 - 15, 2004

Coloquium Talks

- Monthly Lecture, IMAR, Friday, October 18, 2013,
- Colocviul LEA Math-Mode, November 28-29, 2011, Bucharest, Romania
- IMAR, Bucharest, April 2010
- IMAR, Bucharest, July, 2009
- University of Connecticut, February 2007
- McGill University, February 2007
- Georgia Institute of Technology, February 2007
- Notre Dame University, January 2007

Seminar Talks

- Probability Seminar, University of Luxembourg, Feb 12th, 2015
- Research Horizons, Georgia Tech, Oct. 1th, 2014
- Stochastic Seminar, Georgia Tech, Sept. 25th, 2014
- Stochastic Seminar, Georgia Tech, Sept. 5th, 2013
- Geometry Seminar, IMAR, May 20th, 27th and June 3rd, 2013
- Stochastic Seminar, Bonn University, June 9th, 2013
- Analysis Seminar, Northwestern University, Dec 9th, 2012
- Stochastic Seminar, Georgia Tech, September 27th, 2012
- Probability Seminar, Lehigh Univ, September 20th, 2012
- Stochastic Seminar, Georgia Tech, April 19th, 2012
- Probability Seminar, Purdue University, April 3rd 2012
- Felix Klein Seminar, Notre Dame University, March 1st, 2012
- Analysis Seminar, Northwestern University, February 20th, 2012
- Analysis Seminar, Constanta, November 11th 2011
- Probability Seminar, Toulouse University, May, 2010
- Probability Seminar, MIT, November 9th, 2009;
- Free Probability Seminar, Texas AM Oct. 6th, 2009
- Probability Seminar, Colorado Boulder, Sept. 10th 2009
- Probability Seminar, MIT, May 5th, 2009
- Stochastic Seminar, Georgia Tech, October 9, 2008
- Special Seminar, Toulouse, June 26, 2008
- Stochastic Seminar, Georgia Tech, September 27, 2007
- Probability Seminar, Columbia University, February 9, 2007
- Probability and Statistics Seminar, Institute for Applied Math., University of Bonn, June 11, 2005
- Analysis and Probability Seminar, Northwestern University, October 18, 2004
- Analysis and Probability Seminar, Northwestern University, January 29, 2004
- Analysis Seminar, Northeastern University, Boston, January 12, 2004
- Analysis Seminar, MIT, November 26, 2003
- Institut für Angewandte Mathematik, Heidelberg, Spring 1998
- Operator Algebras Seminar, Institute of Mathematics of Romanian Academy, Series of Lectures on "Free Probability Theory", Fall 1998

Invited Visits

- Hausdorf Institute, Feb-March 2015
- Luxembourg University, Feb. 2015
- Toulouse University, June 2008, May 2010, Oct 2011
- Penn State University, Fall 1999
- Institut für Angewandte Mathematik, Heidelberg, March-May 1998
- "Operator Algebra Workshop", Geneva, September 1997

Fellowships and Awards

- Romanian Academy Award for contributions to "Free and Non-Commutative Probability" - 2011
- CURRY fellowship, The Pennsylvania State University, Fall 1999
- TEMPUS fellowship, Heidelberg, Germany, Spring 1998
- First place in Romanian National Olympiad, 1991

Other Professional Activities

Reviewer for:

- Annals of Statistics
- Bernoulli
- Electronic Journal of Probability
- Extremes
- Journal of Fourier Analysis and Applications
- Journal of Operator Theory
- Potential Analysis
- Probability Theory and Related Fields
- Theoretical Journal of Probability
- MathReviews.

Editorial Work:

- The Proceeding of The Fourth Annual Meeting of the European Non Commutative Geometry Network April 25-30, 2011, Bucharest, Romania

Conference Organizer

- Colloque Franco-Roumain en Théorie des Probabilités- Bucharest, Oct. 30-Nov 1st.
- Romanian Congress of Mathematicians, Jun. 26th-Jul. 1st, 2015, - special session on Probability
- Joint International Meeting of the AMS and the Romanian Mathematical Society, June 2013 - special session on Random Matrices and Free Probability
- Probability and Related Aspects, May 22 - 26, 2012, Alba Iulia, Romania
- Mini Conference on Probability and related fields, May 23-24, 2011, Bucharest, Romania

Committees:

Georgia Tech:	- 2013-	Library Committee
Georgia Tech:	- 2007-2008	Colloquium Committee
	- 2008-2009	Graduate Committee
	- 2014-	Graduate Committee

Teaching

IMAR (SNSB):	Fall 2011	- Master course	<i>Random Matrices</i>
	Spring 2010	- Master course	<i>Probability</i>
Georgia Tech:	Fall 2014	- Math6241	<i>Probability I</i>
		- Math7244	<i>Stochastic Processes and Stochastic Calculus I</i>
		- Math1501	<i>Calculus I</i>
	Spring 2014	- Math6242	<i>Probability II</i>
	Fall 2013	- Math3770 sections D & K	<i>Statistics and Applications</i>
	Spring 2013	- Math1502	<i>Calculus II</i>
		- Math3770	<i>Statistics and Applications</i>
	Fall 2012	- Math4261	<i>Introduction to Mathematical Statistics I</i>
	Spring 2012	- Math4262	<i>Introduction to Mathematical Statistics II</i>
		- Math3770E	<i>Statistics and Applications</i>
	Fall 2009	- Math7245	<i>Stochastic Processes and Stochastic Calculus II</i>
		- Math3770D	<i>Statistics and Applications</i>
		- Math3770T	<i>Statistics and Applications</i>
	Spring 2009	- Math7244	<i>Stochastic Processes and Stochastic Calculus I</i>
	Fall 2008	- Math6242	<i>Probability II</i>

	Spring 2008	- Math6241	<i>Probability I</i>
	Fall 2007	- Math3770D	<i>Statistics and Applications</i>
<i>Northwestern:</i>	Spring 2007	- Math310-3	<i>Introduction to Probability and Stochastic Processes III</i>
	Winter 2007	- Math310-2	<i>Introduction to Probability and Stochastic Processes II</i>
		- Math220-0	<i>Differential Calculus</i>
	Fall 2006	- Math310-1	<i>Introduction to Probability and Stochastic Processes I</i>
		- Math214-2	<i>Calculus II</i>
	Spring 2005	- Math330-3	<i>Introduction to Probability and Stochastic Processes III</i>
	Winter 2005	- Math330-2	<i>Introduction to Probability and Stochastic Processes II</i>
		- Math214-2	<i>Calculus II</i>
	Fall 2004	- Math214-1	<i>Calculus I</i>
		- Math214-3	<i>Calculus III</i>

Graduate and Undergraduate Students Supervised

SNSB:	2011	Cristian Gavrus	Master Student
Georgia Tech:	2009-2010	Linwei Xin	Ph.D student
	2014- present	Juntao Duan	Ph.D student
MIT:	Summer 2001	two undergraduate students	SPUR (summer program for undergraduate)