

Oren Louidor's Home Page and CV

Last update: March 26th, 2014



Contact information

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Currently teaching: [096401](#) (the discrete Gaussian free field and related topics).

I'm an assistant professor in the [Faculty of Industrial Engineering and Management](#) at [The Technion](#) (Israel). I'm part of the [probability group](#) in the Technion.

Research interests

Rigorous mathematical analysis of probabilistic models which arise in fields such as physics, biology, chemistry, computer sciences, economics and more.

Educational background

- **PhD in Mathematics.** [Courant Institute \(New York University\)](#). 2005 - 2010. Graduated with distinction.
 - **MA. in Mathematics.** [Courant Institute \(New York University\)](#). 2005 - 2007.
 - **MSc. in Operations Research.** [Technion - Israel Institute of Technology](#). 2004 - 2006. Summa Cum Laude.
 - **BSc. in Computer Sciences.** [Technion - Israel Institute of Technology](#). 1995 - 2000. Summa Cum Laude.
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Previous academic positions

- **Adjunct Assistant Professor of Mathematics** ([Simons Fellow](#)). 2010-2013. [University of California Los Angeles](#).
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Awards and scholarships

- **Marie Curie (EU) career integration grant.** 2013-2017
 - **[Simons](#) postdoctoral fellowship.** UCLA. 2010-2013.
 - **Distinguished PhD Dissertation Award.** NYU. 2010.
 - **MacCracken PhD scholarship.** NYU. 2005-2010. (Full PhD tuition and a monthly stipend).
 - **Member of [Technion's exceptionally gifted students program](#).** Technion. 1996-2000.
 - **Benin award for academic achievements.** 2002
 - **Exceptional academic achievements award (awarded 8 times).** Technion. 1995-2000.
 - **Distinguished TA prize.** 1999. Technion.
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Papers

- [9] **Extreme local extrema of two-dimensional discrete Gaussian free field** (with M. Biskup). *Submitted* (*arXiv:1306.2602*). [arXiv](#).
 - [8] **Isoperimetry in two dimensional percolation** (with Marek Biskup, Eviatar Procaccia and Ron Rosenthal). *Submitted* (*arXiv:1211.0745*). [arXiv](#).
 - [7] **Distributional Large Deviations in the Branching Random Walk** (with William Perkins). *Submitted* (*arXiv:1206.5017*). [arXiv](#).
 - [6] **The Williams Bjerknæs Model on Regular Trees** (with Ran Tessler and Alexander Vandenberg-Rodes). *To appear in Annals of Applied Probability*. [arXiv](#).
 - [5] **Trapping in the Random Conductance Model** (with Marek Biskup, Alex Rozinov and Alexander Vandenberg-Rode). *Journal of Statistical Physics: Volume 150, Issue 1 (2013), Page 66-87*. [arXiv](#).
 - [4] **Glauber dynamics for the mean field Potts model** (with Paul Cuff, Jian Ding, Eyal Lubetzki, Yuval Peres and Allan Sly). *Journal of Statistical Physics: Volume 149, Issue 3 (2012), Page 432-477*. [arXiv](#).
 - [3] **Directed polymers in random environment with heavy tails** (with Antonio Auffinger). *Communications On Pure and Applied Mathematics*, 64 183-204(2011) [arXiv](#).
 - [2] **Finite connections for super-critical Bernoulli bond percolation in 2D** (with Dmitry Ioffe and Massimo Campanino). *Anniversary issue of Mark. Proc. Rel. Fields 16, 225-266 (2010)*. [arXiv](#).
 - [1] **Fixation for distributed clustering processes** (with Marcelo R. Hilario, Charles M. Newman, Leonardo T. Rolla, Scott Sheffield and Vladas Sidoravicius). *Communications on Pure and Applied Mathematics*, 63 926-934 (2010) [arXiv](#).
 - [0] **Pinning phenomena and models of directed polymers** Preprint (MSc. Thesis). [PDF](#).
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Selected academic visits

- **University of Provence (Marseille, France)**. 6/10/2013 - 6/14/2013. Conference on branching diffusions and Gaussian free fields in physics, probability and number theory.
 - **Technion (Haifa, Israel)**. 3/4/2013 - 3/8/2013. Workshop on discrete structures and related methods from stochastic analysis.
 - **Mathematisches Forschungsinstitut Oberwolfach (Oberwolfach, Germany)**. 9/9/2012 - 9/15/2012. Workshop on Scaling Limits in Models of Statistical Mechanics.
 - **Technion (Haifa, Israel)**. 6/15/2012 - 9/15/2012. Summer Postdoctoral Fellowship.
 - **University Paris-Est Marne-la-Vallée (Paris, France)**. 1/9/2012-1/13/2012. Winter school on discrete Fourier analysis.
 - **Center for Theoretical Study - Charles University (Prague, Czech Republic)**. 8/29/2011 - 9/9/2011. Summer school.
 - **Banff International Research Station (Banff, Canada)**. 5/29/2011 - 6/3/2011. Program on gradient random fields.
 - **Fields Institute (Toronto, Canada)**. 2/14/2011 - 2/18/2011. Workshop on interacting processes in random environments.
 - **Microsoft Research Theory Group (Redmond, WA, USA)**. 7/20/2009 - 8/17/2009. Visit.
 - **Cornell University (Ithaca, NY, USA)**. 7/6/2009 - 7/15/2009. Summer school.
 - **Technion (Haifa, Israel)**. 5/1/2009 - 7/4/2009. Visit.
 - **Institut Henri Poincaré (Paris, France)**. 9/5/2008 - 12/19/2008. Thematic trimester on interacting particle systems, statistical mechanics and probability theory.
 - **Microsoft Research Theory Group (Redmond, WA, USA)**. 05/06/2008 - 07/25/2008. Internship.
 - **IAS/PCMI (Park City, UT, USA)**. 7/1/2007 - 7/21/2007. Summer school.
 - **Isaac Newton Institute at Cambridge University (Cambridge, UK)**. 8/1/2003 - 8/30/2003. Thematic Program.
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Selected talks in seminars and colloquia

Times and Places:

- **University of Provence.** Conference on branching diffusions and Gaussian free fields in physics, probability and number theory. 6/30/2013.
- **Iowa State University.** AMS Meeting. 4/28/2013.
- **Columbia University.** Probability Seminar. 4/26/2013.
- **Ben Gurion University.** Mathematics Colloquium. 12/9/2012.
- **Bar Ilan University.** Mathematics Colloquium. 12/9/2012.
- **Technion.** Mathematics Colloquium. 12/3/2012.
- **Mathematisches Forschungsinstitut Oberwolfach.** Workshop on Scaling Limits in Models of Statistical Mechanics. 9/14/2012.
- **Weizmann Institute.** Probability and Functional Analysis Seminar. 8/9/2012.
- **Weizmann Institute.** Mini Summer School in Probability. 7/24/2012.
- **Tel Aviv University.** Probability Seminar. 7/2/102.
- **Technion Israel Institute of Technology.** Probability Seminar. 6/29/2012.
- **Georgia Tech.** Probability Seminar. 2/16/2012.
- **Technion Israel Institute of Technology.** Probability Seminar. 12/13/2011.
- **Tel Aviv University.** Probability Seminar. 12/12/2011.
- **UC Irvine.** Probability Seminar. 10/11/2011.
- **Banff International Research Station.** 5/31/2011.
- **UCLA.** Probability Seminar. 4/27/2011.
- **University of Connecticut.** Probability and Analysis Seminar. 4/1/2011.
- **Fields Institute.** Toronto. Workshop on Directed Polymers. 2/15/2011.
- **Southern Californian Probability Symposium.** 12/4/2010.
- **Michigan State University.** Probability Seminar. 11/17/2010.
- **University of Southern California.** Probability Seminar. 10/15/2010.
- **UCLA.** Probability Seminar. 10/1/2010.
- **Technion Israel Institute of Technology.** Probability Seminar. 6/9/2009.
- **Cornell University.** Summer School in Probability. 7/8/2009.
- **MIT.** Probability Seminar. 3/10/2009.
- **Technion Israel Institute of Technology.** Probability Seminar. 11/25/2008.
- **MIT.** Probability Seminar 11/2/2009.
- **Courant Inst. (NYU).** Probability Seminar 11/6/2009.
- **University of Maryland.** Probability Seminar 11/16/2009.
- **Stanford University.** Probability Seminar 11/30/2009.
- **UCLA.** Probability Seminar 12/2/2009.
- **Cambridge University.** Probability Seminar 12/4/2009.
- **Oxford University.** Probability Seminar 12/7/2009.

Slides:

- Glauber dynamics for the mean field Potts model. [PDF](#).
- Directed polymers in random environment with heavy tails. [PDF](#).
- Finite connections for super-critical Bernoulli bond percolation in 2D. [PDF](#).

Teaching

Current:

- **Advanced topics in probability: the discrete Gaussian free field and related topics (096401).** Instructor. Technion. [Fall 2013](#).

Past:

- **Introduction to Probability.** Instructor. Technion. Fall 2013.
- **Participating Probability Seminar (Graduate Seminar).** Organizer. UCLA. [Fall 2012](#).
- **Concentration of Measure (Graduate Seminar).** Organizer. UCLA. [Spring 2012](#).
- **Probability Theory (Graduate Course).** Instructor. UCLA. [Fall 2011](#).
- **Combinatorics.** Instructor. UCLA. [Summer 2011](#).
- **Probability for Life Sciences Students.** Instructor. UCLA. [Summer 2011](#), [Winter 2011](#).
- **Calculus for Life Sciences Students.** Instructor. UCLA. Spring 2011. [Spring 2011](#).
- **Calculus II.** Instructor. Courant (NYU). Spring 2009.
- **PhD qualifying exam preparatory workshop (graduate course).** Instructor. Courant (NYU). Spring 2007, Spring 2008.
- **Calculus II.** TA. Courant (NYU). Fall 2007.
- **Calculus for the social sciences.** TA. Courant (NYU). Fall 2006.
- **Number theory.** TA. Courant (NYU). Spring 2006.
- **Stochastic processes (graduate Course).** TA. Technion. Fall 1999.
- **Convex optimization (graduate Course).** TA. Technion. Spring 1999.
- **Introduction to probability (600 students).** Head TA. Technion. Fall 1998.
- **Introduction to probability.** TA. Fall 2003. Technion. Spring 1997, Fall 1997, Spring 1998.
- **Extra-curricular advanced mathematics course for high-school students.** Instructor. Ort Motzkin High-school. Fall 2004, Spring 1993 - Fall 1994.
- **Introduction to C.** TA. Technion. Fall 1996.
- **Operation systems structure I.** TA. Technion. Fall 2001.
- **Operation systems structure II.** TA. Technion. Spring 2002.

Conferences and workshops:

- [Conference on Inquiry-Based Learning - 12th Annual Legacy of R.L. Moore](#). Austin, TX. 16 - 18 July 2009.

Coauthors

[Antonio Auffinger](#) . Marek Biskup . [Massimo Campanino](#) . [Paul Cuff](#) . [Jian Ding](#) . [Marcelo R. Hilario](#) . [Dmitry Ioffe](#) . [Eyal Lubetzki](#) . [Charles M. Newman](#) . [Yuval Peres](#) . [Will Perkins](#) . [Eviatar Procaccia](#) . [Leonardo T. Rolla](#) . Ron Rosenthal. Alexander Rozinov. [Scott Sheffield](#) . [Vladas Sidoravicius](#) . [Allan Sly](#) . Ran Tessler. [Alexander Vandenberg](#) .

Non-academic employment

- Summer Associate. [JPMorgan Chase](#) . New York, NY. Summer 2007.
- Software Team Leader. [RAFEAL Advanced Defense Systems](#). Israel. 2004 - 2005.
- Software Developer. [RAFAEL Advanced Defense Systems](#). Israel. 2002 - 2004.
- Software Developer. [Israeli Defense Force - Intelligence](#) . Israel. 2000 - 2002.
- Software Developer. [Zoran Corporation](#) . Israel. 2000.