

# Curriculum Vitae

Asaf Nachmias

Postdoc researcher,  
Theory group at Microsoft research,  
One Microsoft Way, Redmond, WA, 98052-6399.  
Email: asafn@microsoft.com  
Homepage: <http://research.microsoft.com/~asafn>

## Research interests

Probability theory and statistical physics. Focused mainly on percolation, random walks and mixing time of Markov chains.

## Education

- 2000-2003, B.Sc. in Mathematics and Computer Science (Summa Cum Laude), Tel-Aviv University, Israel.
- 2003-2004, M.Sc. in Mathematics under the supervision of Prof. Michael Krivelevich, Tel-Aviv University, Israel. M.Sc. Thesis title: “Coloring graphs from random lists”.
- Summer 2005, Research Intern at the Theory Group of Microsoft Research, Redmond, WA.
- 2004-2008 Ph.D. in Mathematics under the supervision of Prof. Yuval Peres, University of California at Berkeley. Thesis title: “Critical percolation on finite graphs”.

## Publications (all papers are available online at my homepage)

Colouring powers of cycles from random lists (with M. Krivelevich),  
*European Journal of Combinatorics* **25**, (2004), 961-968.

Colouring complete bipartite graphs from random lists (with M. Krivelevich),  
*Random Structures and Algorithms* **29**, 4, 436-449, 2006.

The critical random graph, with martingales (with Y. Peres),  
*Israel Journal of Mathematics*, to appear.

Component sizes of the random graph outside the scaling window (with Y. Peres),  
*Latin American Journal of Probability and Mathematical Statistics (ALEA)*, **3**, 133-142, 2007.

Mixing time power laws at criticality, (with Y. Long and Y. Peres),  
*Proc. of the 48th IEEE FOCS*, 2007.

Critical random graphs: diameter and mixing time (with Y. Peres),  
*Annals of Probability*, **36**, no. 4, 1267-1286, 2008.

Testing the expansion of a graph (with Asaf Shapira),  
*Information and Computation*, to appear.

Mean-field conditions for percolation on finite graphs,  
*Geometric and Functional Analysis (GAFA)*, to appear.

Critical percolation on random regular graphs (with Y. Peres),  
*Random Structures and algorithms*, to appear.

The Alexander-Orbach conjecture holds in high dimensions (with Gady Kozma),  
*Inventiones Mathematicae*, **178**, no. 3, 635–654, 2009.

Is the critical percolation probability local? (with Itai Benjamini and Y. Peres),  
*Probability Theory and Related Fields*, to appear.

A note about critical percolation on finite graphs (with Gady Kozma), *preprint*.

Arm exponents in high dimensional percolation (with Gady Kozma), *preprint*.

The evolution of the cover time (with Martin Barlow, Jian Ding and Yuval Peres),  
*preprint*.

### **Selected invited talks**

- Institute for Mathematics, National University of Singapore, May 2006.
- 13th International Conference on Random Structures and Algorithms, Tel-Aviv, May 2007.
- Probability Seminar, University of Tübingen, June 2007.
- IAS/Park City Mathematics Institute, Utah, July 2007.
- 48th Symposium on Foundations of Computer Science (FOCS), Providence, October 2007.
- Institute for Theoretical Computer Science, Tsinghua University, Beijing, November 2007.
- Probability seminar, UBC, Vancouver CA, October 2008.
- “Random processes and systems” conference, Kyoto, February 2009.
- Combinatorics and Probability workshop, Oberwolfach, April 2009.
- “Hypathie” seminar, Marseilles, October 2009.
- Mathematics Colloquium, UCLA, October 2009.

### **Teaching experience**

- 2004, Teaching assistant: Calculus for Engineers and Analytic Geometry, Tel-Aviv University.
- 2007, Instructor: Stat 155 (Game Theory), U.C. Berkeley.