

Marc Lelarge

INRIA - ENS

23 avenue d'Italie

75013 Paris

France

URL: <http://www.di.ens.fr/~lelarge>

Phone: +33 (0)1 39 63 55 33

Fax: +33 (0)1 39 63 53 30

email: marc.lelarge@ens.fr

Education

- 2001-2005 Ph.D. in Applied Mathematics, Ecole Polytechnique
Dissertation: Rare events in networks. Advisor: Prof. F. Baccelli
- 2000-2001 M.S. in Probability, Université Paris VI
- 1999-2001 Diplôme d'Ingénieur, Ecole Nationale Supérieure des Télécommunications
- 1996-1999 Diplôme d'Ingénieur, Ecole Polytechnique

Professional experience

- 2006- Research scientist, INRIA - Ecole Normale Supérieure, Paris, France
- 2005-2006 University College Cork, Department of Mathematics, Post-Doctoral Fellow, Cork, Ireland
- 2004-2005 IBM, System Analysis and Optimization group, Research Staff Member, New York, USA

Teaching at Ecole Normale Supérieure

- math/cs graduate course: Information theory and coding (Spring 09, 10)
- math/cs undergraduate course: Random structures and algorithms (with P. Brémaud) (Fall 09)
- math/physics graduate projects: Statistical mechanics of mean field disordered systems (with G. Semerjian) (Spring 09)
- cs graduate course: Communication networks (with F. Baccelli and A. Chaintreau) (Spring 07)

Supervised Students (with percentage of supervision)

- Emilie Coupechoux, Ph.D. student (Analysis of large random graphs), 100%, since 2009
- Emilie Coupechoux, M.S. student in probability, Université Paris XI (Orsay), 100%, 2009
- Justin Salez, Ph.D. student (Analysis of network algorithms), 90%, since 2008
- Hamed Amini, Ph.D. student (Diffusion and epidemics), 50%, since 2007
- Antonella Villani, M.S. student in probability, Università de L'Aquila, Italie, 100%, 2004

Projects

- SPRINT ATL Grant, 2007-2008, obtained with F. Baccelli
- Member of the Network of Excellence Euro-NGI and EURO-NF

Publications

11 papers in international journals on the following topics:

- Combinatorial optimization and random graphs: Random Structures Algorithms, SIAM J. Comput., Ann. Inst. Henri Poincaré Probab. Stat.
- Stochastic Networks: Queueing Systems (3), Discrete Event Dyn. Syst., Math. Methods Oper. Res., J. Appl. Prob. (3).

More than 15 papers in major peer-reviewed conferences on the following topics:

- Analysis of algorithms: SODA, AofA.
- Economics of networks: Europ. Ass. Research in Industrial Economics, Work. Economics of Information Security (2), NetEcon, Work. Internet and Network Economics.
- Performance evaluation of communication networks: Allerton (2), SIGMETRICS (3), INFO-COM (3), Netcoop, Valuetools.

Journal articles (6 out of 11)

- Charles Bordenave, Marc Lelarge, Resolvent of Large Random Graphs, to appear in *Random Structures and Algorithms*
- 2009 David J. Aldous, Charles Bordenave, Marc Lelarge, Dynamic Programming Optimization over Random Data: the Scaling Exponent for Near-optimal Solutions, *SIAM Journal on Computing*, 38(6):2382-2410.
- 2008 David J. Aldous, Charles Bordenave, Marc Lelarge, Near-Minimal Spanning Trees: a Scaling Exponent in Probability Models, *Annales de l'Institut Henri Poincaré (B)* 44(5): 962-976.
- 2007 Marc Lelarge, Tail asymptotics for monotone-separable networks, *Journal of Applied Probability* 44(2):306-320.
- 2005 François Baccelli, Serguei Foss, Marc Lelarge, Tails in Generalized Jackson Networks with Subexponential Service Time Distributions, *Journal of Applied Probability* 42(2):513-530.
- 2004 François Baccelli, Marc Lelarge, Serguei Foss, Asymptotics of Subexponential Max Plus Networks the Stochastic Event Graph Case, *Queueing Systems. Theory and Applications* 46(1-2):75-96.

Conferences (6 out of 16)

- Charles Bordenave, Marc Lelarge, The Rank of Diluted Graphs, to appear in *SODA*
- 2009 Marc Lelarge, Economics of Malware: Epidemic Risks Model, Network Externalities and Incentives, to appear in *Allerton Conference* and *WEIS*
- 2009 Marc Lelarge, Efficient Control of Epidemics over Random Networks, *ACM SIGMETRICS*, 1-12.
- 2008 Marc Lelarge, Diffusion of Innovations on Random Networks: Understanding the Chasm, *WINE*, LNCS 5385, 178-185.
- 2008 Marc Lelarge, Jean Bolot, Network Externalities and the Deployment of Security Features and Protocols in the Internet, *ACM SIGMETRICS*, 37-48.
- 2007 Cathy H. Xia, Zhen Liu, Don Towsley, Marc Lelarge, Scalability of Fork/Join queueing networks with blocking, *ACM SIGMETRICS*, 133-144.

Patent

- 2008 Z. Liu, G. Grabarnik, A. Riabov, M. Lelarge et al., USPTO 20080016547: System and method for security planning with hard security constraints.

Invited speaker in workshops and conferences (since 2007)

- 2009-2007 Young European Queueing Theorists, EURANDOM, Netherlands
- 2009-2007 INFORMS/Applied Probability Society Conference
- 2009-2007 Stochastic Networks And Related Topics, Bedlewo, Poland
- 2009-2007 ALEA, CIRM, France
- 2009 Information Theory and Applications Workshop, UCSD, USA
- 2008 Meeting on Complexity and Networks: Epidemic Spreading and Networks, Imperial College London, UK
- 2008 Young European Probabilists: Statistical Mechanics on Random Structures, EURANDOM, Netherlands

International seminars and visits

Networking, Communications, and DSP Seminar (UC Berkeley), Probability Seminar (Stanford), HyNet Colloquium (UMD), IBM, Probability Seminars University College Cork (Ireland), Hamilton Institute (Ireland), Statistical Laboratory Networks Seminar of Cambridge (U.K.)

Professional Activities

Technical Program Committee for: *Inter-Perf 2007*, *NetCoop 2008-2009*, *SIGMETRICS 2009*.
Co-organizer, Young European Queueing Theorists EURANDOM 2009.
Reviewer: *Ann. Probab.*, *Stochastic Process. Appl.*, *J. Appl. Prob.*, *Math. Methods Oper. Res.*, *Queueing Systems*, *Performance Evaluation*, *IEEE/ACM Trans. Networking*, *IEEE/ACM Trans. Information Theory*, *Computer Networks*, *ACM Trans. Information and Systems Security*