

George Giakkoupis

PERSONAL	Address: IRISA/INRIA Rennes Campus Universitaire de Beaulieu 35042 Rennes Cedex, France Office: E301 Phone: +33 2 99 84 71 96 Fax: +33 2 99 84 71 71 Email: george.giakkoupis@inria.fr URL: http://www.giakkoupis.name	
RESEARCH	Randomized algorithms Distributed algorithms Theory of distributed computing	
EMPLOYMENT	Permanent Researcher (CR), INRIA Rennes, France Member of the ASAP project-team.	2012–now
	Postdoctoral Fellow, University of Calgary Supervised by Philipp Woelfel.	2011–2012
	Postdoctoral Fellow, Université Paris 7 Member of the Distributed Algorithms and Graphs team at LIAFA Supervised by Pierre Fraigniaud.	2008–2011
	Software Engineer, Institute for Language and Speech Processing, Greece	1998–1999
EDUCATION	Ph.D. in Computer Science, University of Toronto Advisor: Vassos Hadzilacos Thesis: <i>On load balancing and routing in peer-to-peer systems.</i>	2002–2008
	M.Sc. in Computer Science, University of Toronto Advisor: Vassos Hadzilacos Thesis: <i>On the equivalence of strongly t-resilient and wait-free implementations of Consensus.</i>	1999–2001
	B.Sc. in Electrical and Computer Engineering National Technical University of Athens Thesis: <i>An optical recognition system for music scores.</i> GPA: 9.1/10	1993–1999
HONORS & GRANTS	Principal investigator of the INRIA Associate Team RADCON (Randomized Algorithms for Distributed Computing and Networks) 2013–2015. RADCON is a joint project between ASAP and the University of Calgary, sponsored by INRIA. Best paper award of PODC 2012 PIMS Postdoctoral Fellowship, University of Calgary, 2011–2012 University of Toronto Graduate Fellowship, 1999–2006	

TEACHING &
SUPERVISION

Course Instructor, University of Toronto, 2008
Course: Introduction to the Theory of Computation (70 students)

Teaching Assistant, University of Toronto, 1999–2008

Courses:

Introduction to the Theory of Computation (5 times)
Data Structures and Analysis (5 times)
Algorithm Design and Analysis (3 times)
Introduction to Distributed Computing (once; graduate level)
Principles of Programming Languages (twice)
File Structures and Data Management (once)
Computer Networks (twice; once at graduate level)
Simulation Modeling and Analysis (3 times)
Numerical Methods (once)

Students:

Yasamin Nazari, M.Sc. 2014-now (co-supervised with Philipp Woelfel)
Frederik Mallmann-Trenn, M.Sc. 2014 (co-supervised with Petra Berenbrink)
Nupur Mittal, PhD 2013-now (co-supervised with Anne-Marie Kermarrec)
Olivier Ruas, M.Sc. 2013
Benjamin Girault, M.Sc. 2012

PhD Committees:

Maryam Helmi, University of Calgary, Canada, 2016
Scott Roche, Northeastern University, Brown, US, 2016

ACADEMIC
ACTIVITY

Participation in the *BIRS-CMO Workshop on Complexity and Analysis of Distributed Algorithms*, Oaxaca, Mexico, Nov. 27–Dec. 2, 2016, by invitation.

Participation in the *Random Processes on Discrete Structures Workshop*, University of Warwick, UK, Aug. 31–Sep. 2, 2016, by invitation.

Participation in the *Random Walks on Random Graphs and Applications Workshop*, Eurandom, TU Eindhoven, The Netherlands, Apr. 14–16, 2015, by invitation.

Participation in *ICERN Workshop on Stochastic Graph Models*, Brown University, US, Mar. 17–21, 2014, by invitation.

Organizer of the *Workshop on Randomized Algorithms for Distributed Computing and Networks (RADICON)*, Rennes, France, Jul. 21 2014.

Participation in *Dagstuhl Workshop on Epidemic Algorithms and Processes: From Theory to Applications*, Germany, Jan. 20–25, 2013, by invitation.

Participation in *BIRS Workshop on Probabilistic versus Deterministic Techniques for Shared Memory Computation*, Banff, Canada, Feb. 5–10, 2012, by invitation.

Program committees:

womENCourage 2016, ICDCN 2016, DISC 2014, SIROCCO 2014, FOMC 2013, CC-Net 2011.

Conference committees:

PODC 2014, PODC 2015 (Treasurer), PODC 2016 (General Chair).

Steering committees:
PODC 2015, PODC 2016.

Journal reviews:
ACM Transactions on Algorithms (TALG)
Discrete Applied Mathematics
Distributed Computing (DIST)
IEEE Transactions on Information Theory
Journal of Computer and System Sciences (JCSS)
Journal of the ACM (JACM)
SIAM Journal on Computing (SICOMP)
SIAM Journal on Discrete Mathematics (SIDMA)
Theoretical Computer Science (TCS)

Conference reviews:
DISC 2016, SIRROCO 2016, MFCS 2016, PODC 2016, SPAA 2016, STACS 2016,
LATIN 2016, ICDCN 2016, SODA 2016, DISC 2015, ESA 2015, RANDOM 2015,
PODC 2015, SODA 2015, DISC 2014, RANDOM 2014, ICALP 2014, SPAA 2014,
STOC 2014, SODA 2014, DISC 2013, ESA 2013, PODC 2013, STACS 2013, SODA
2013, WINE 2012, TAPAS 2012, PODC 2012, SPAA 2012, STOC 2012, STACS
2012, DISC 2011, FOCS 2011, ICALP 2011, PODC 2011, WWW 2011, MFCS 2010,
PODC 2008, PODC 2005.

Grant proposal reviewer for NSERC (2013), WWTF (2012).

INVITED TALKS

Recent advances in randomized rumor spreading. Nexus of Information and Computation Theories, Distributed Computation and Communication Theme, The Henri Poincare Institute (IHP), Paris, France, Feb. 1 2016.

Vertex connectivity under sampling. Seminar of the Computer Science and Telecommunications Department, Ecole Normale Supérieure, Rennes, France, Sep. 15 2015.

Bounds on the voter model in terms of graph expansion. Random Walks on Random Graphs and Applications Workshop, Eurandom, TU Eindhoven, The Netherlands, Apr. 14 2015.

Rumor spreading: Techniques and results. Tutorial, 8th Winter School on Hot Topics in Distributed Computing (HTDC), Flaine, France, Mar. 18 2015.

Vertex connectivity under vertex sampling. PIMS Algorithmic Theory of Networks Seminar, University of Calgary, Canada, Mar. 6 2015.

Rumor spreading and graph expansion. CS and SE Seminar, Concordia University, Montreal, Canada, Mar. 10 2014.

Rumor spreading on dynamic graphs. CS Theory Seminar, University of Calgary, Canada, Nov. 29 2013.

Gossip protocols for information dissemination and other tasks. 3rd Workshop on Storage and Cloud Computing (WOS3), Rennes, France, Nov. 22 2013.

Tight bounds for rumor spreading with graph expansion. PODC Social Network Workshop, Montreal, Canada, Jul. 21 2013.

Randomized loose renaming in $O(\log \log n)$ time. ASAP Workshop on Distributed Computing, Rennes, France, Jun. 28 2013.

Rumor spreading and graph expansion. 3rd Pacific Northwest Theory Day, University of Victoria, Canada, May 5 2013.

Rumor spreading and vertex expansion. Workshop on Epidemic Algorithms and Processes: From Theory to Applications, Dagstuhl, Germany, Jan. 21 2013.

Rumor spreading. Workshop on Advances on Distributed Graph Algorithms (ADGA), Salvador, Brazil, Oct. 19 2012.

Rumor spreading: An overview. CS Theory Seminar, University of Calgary, Canada, Jun. 14 2012.

On randomized test-and-set. BIRS Workshop on Probabilistic versus Deterministic Techniques for Shared Memory Computation, Banff, Canada, Feb. 6 2012.

Models and algorithms for large complex networks. Faculty Candidate Seminar, University of Houston, Texas, Apr. 25 2011.

Rumor spreading and graph conductance. Max Planck Institute for Computer Science, Germany, Feb. 24 2011.

Search in small worlds. CS Theory Seminar, University of Calgary, Canada, May 20 2010.

Search in small-world networks. Helsinki Institute for Information Technology, Finland, May 4 2010.

Navigation in small-world graphs with power-law degrees. Toronto Networking Seminar, University of Toronto, Canada, Aug. 18 2009.

The effect of power-law degrees on the navigability of small worlds. Technicolor Paris Research Lab, France, June 3 2009.

PUBLICATIONS

- [1] G. Giakkoupis, Y. Nazari and P. Woelfel. How asynchrony affects rumor spreading time. *Proc. 35th ACM Symposium on Principles of Distributed Computing (PODC)*, 2016.
- [2] P. Berenbrink, G. Giakkoupis, A.M. Kermarrec and F. Mallmann-Trenn. Bounds on the Voter Model in Dynamic Networks. *Proc. 43rd International Colloquium on Automata, Languages and Programming (ICALP)*, 2016.
- [3] P. Berenbrink, T. Friedetzky, G. Giakkoupis and P. Kling. Efficient plurality consensus, or: The benefits of cleaning up from time to time. *Proc. 43rd International Colloquium on Automata, Languages and Programming (ICALP)*, 2016.
- [4] G. Giakkoupis, R. Guerraoui, A. Jégou, A.M. Kermarrec and N. Mittal. Privacy-conscious information diffusion in social networks. *Proc. 29th International Symposium on Distributed Computing (DISC)*, pp. 480–496, 2015.
- [5] G. Giakkoupis, M. Helmi, L. Higham and P. Woelfel. Test-and-set in optimal

- space. *Proc. 47th ACM Symposium on Theory of Computing (STOC)*, pp. 615–623, 2015.
- [6] K. Censor-Hillel, M. Ghaffari, G. Giakkoupis, B. Haeupler and F. Kuhn. Tight bounds on vertex connectivity under vertex sampling. *Proc. 26th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pp. 2006–2018, 2015.
(Journal version invited to *Transactions on Algorithms, SODA 2015 Special Issue.*)
- [7] G. Giakkoupis and P. Woelfel. Randomized mutual exclusion with constant amortized RMR complexity on the DSM. *Proc. 55th IEEE Symposium on Foundations of Computer Science (FOCS)*, pp. 504–513, 2014.
- [8] G. Giakkoupis, T. Sauerwald and A. Stauffer. Randomized rumor spreading in dynamic graphs. *Proc. 41st International Colloquium on Automata, Languages and Programming (ICALP)*, pp. 495–507, 2014.
- [9] P. Fraigniaud and G. Giakkoupis. Greedy routing in small-world networks with power-law degrees. *Distributed Computing* 27(4): 231–253, 2014.
- [10] G. Giakkoupis. Tight bounds for rumor spreading with vertex expansion. *Proc. 25th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pp. 801–815, 2014.
- [11] G. Giakkoupis, A.M. Kermarrec, and P. Woelfel. Gossip protocols for renaming and sorting. *Proc. 27th International Symposium on Distributed Computing (DISC)*, pp. 194–208, 2013.
(Journal version invited to *Distributed Computing, DISC 2013 Special Issue.*)
- [12] G. Giakkoupis, M. Helmi, L. Higham, and P. Woelfel. An $O(\sqrt{n})$ space bound for obstruction-free leader election. *Proc. 27th International Symposium on Distributed Computing (DISC)*, pp. 46–60, 2013.
(Journal version invited to *Distributed Computing, DISC 2013 Special Issue.*)
- [13] D. Alistarh, J. Aspnes, G. Giakkoupis and P. Woelfel. Randomized loose renaming in $O(\log \log n)$ time. *Proc. 32nd ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 200–209, 2013.
- [14] G. Giakkoupis and P. Woelfel. On the time and space complexity of randomized Test-And-Set. *Proc. 31st ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 19–28, 2012.
(Best paper award. Journal version submitted to *Distributed Computing, PODC 2012 Special Issue.*)
- [15] G. Giakkoupis and P. Woelfel. A tight RMR lower bound for randomized mutual exclusion. *Proc. 44th ACM Symposium on Theory of Computing (STOC)*, pp. 983–1002, 2012.
- [16] G. Giakkoupis, T. Sauerwald, H. Sun and P. Woelfel. Low randomness rumor spreading via hashing. *Proc. 29th International Symposium on Theoretical Aspects of Computer Science (STACS)*, pp. 314–325, 2012.
- [17] G. Giakkoupis and T. Sauerwald. Rumor spreading and vertex expansion. *Proc. 23rd ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pp. 1623–1641,

2012.

- [18] G. Giakkoupis and N. Schabanel. Optimal path search in small worlds: Dimension matters. *Proc. 43rd ACM Symposium on Theory of Computing (STOC)*, pp. 393–402, 2011.
- [19] G. Giakkoupis. Tight bounds for rumor spreading in graphs of a given conductance. *Proc. 28th International Symposium on Theoretical Aspects of Computer Science (STACS)*, pp. 57–68, 2011.
(Journal version invited to *Theory of Computing Systems, STACS 2011 Special Issue.*)
- [20] G. Giakkoupis and P. Woelfel. On the randomness requirements of rumor spreading. *Proc. 22nd ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pp. 449–461, 2011.
- [21] P. Fraigniaud and G. Giakkoupis. On the bit communication complexity of randomized rumor spreading. *Proc. 22nd ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, pp. 134–143, 2010.
- [22] P. Fraigniaud and G. Giakkoupis. On the searchability of small-world networks with arbitrary underlying structure. *Proc. 42nd ACM Symposium on Theory of Computing (STOC)*, pp. 389–398, 2010.
- [23] P. Fraigniaud and G. Giakkoupis. The effect of power-law degrees on the navigability of small worlds. In *Proc. 28th ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 240–249, 2009.
(Journal version submitted to *Distributed Computing, PODC 2009 Special Issue.*)
- [24] G. Giakkoupis and V. Hadzilacos. On the complexity of greedy routing in ring-based peer-to-peer networks. *Proc. 26th ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 99–108, 2007.
- [25] G. Giakkoupis and V. Hadzilacos. A scheme for load balancing in heterogeneous distributed hash tables. *Proc. 24th ACM Symposium on Principles of Distributed Computing (PODC)*, pp. 302–311, 2005.

Non-refereed:

- [26] G. Giakkoupis, A. Gionis, E. Terzi, and P. Tsaparas. Models and algorithms for network immunization. *Technical Report C-2005-75*, Department of Computer Science, University of Helsinki, 2005.

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