

## NIKOLA MILOSAVLJEVIĆ

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### Research Interests

Wireless ad-hoc and sensor networks; algorithm design, analysis and engineering; computational geometry and topology; convex and combinatorial optimization, graph theory.

### Education

09/2003–09/2009 M.Sc. and Ph.D. in Computer Science, Stanford University, Stanford, CA.  
07/1997–05/2002 B.Sc. in Electrical Engineering, University of Belgrade, Serbia. GPA 10/10.

### Theses

Ph.D. Thesis: Robust Algorithms for Infrastructure Establishment in Sensor Networks

Advisor: Prof. Leonidas Guibas.

Reading committee: Prof. Ashish Goel, Prof. Leonidas Guibas, Prof. Serge Plotkin.

B.Sc. Thesis: Adaptive Space-Time Block Codes.

Advisor: Prof. Dušan Drajić.

### Publications

1. J. Gao, L. Guibas, N. Milosavljević, D. Zhou. Distributed Resource Management and Matching in Sensor Networks. Proceedings of the 8th International Conference on Information Processing in Sensor Networks (IPSN), 2009.
2. B. Kusy, H.J. Lee, M. Wicke, N. Milosavljević, L. Guibas. Predictive QoS Routing to Mobile Sinks in Wireless Sensor Networks. Proceedings of the 8th International Conference on Information Processing in Sensor Networks (IPSN), 2009.
3. D. Dumitriu, S. Funke, M. Kutz, N. Milosavljević. On the Locality of Extracting a 2-Manifold in  $\mathbb{R}^3$ . Proceedings of the 11th Scandinavian Workshop on Algorithm Theory (SWAT), 2008. Preliminary version at the 24th European Workshop on Computational Geometry (EWCG), 2008.
4. A. Ene, W. Horne, N. Milosavljević, P. Rao, R. Schreiber, R. E. Tarjan. Fast Exact and Heuristic Methods for Role Minimization Problems. Proceedings of the 13th ACM Symposium on Access Control Models and Technologies (SACMAT), 2008.
5. H. Lin, M. Lu, N. Milosavljević, J. Gao, L. J. Guibas. Composable Information Gradients in Wireless Sensor Networks. Proceedings of the 7th International Conference on Information Processing in Sensor Networks (IPSN), 2008.
6. D. Dumitriu, S. Funke, M. Kutz, N. Milosavljević. How Much Geometry It Takes to Reconstruct a 2-Manifold in  $\mathbb{R}^3$ . ACM Journal of Experimental Algorithmics volume 14, August 2009. Preliminary version at the 9th Workshop on Algorithm Engineering and Experiments (ALENEX), 2008.
7. J. Gao, L. Guibas, J. Hershberger, N. Milosavljević. Sparse Data Aggregation in Sensor Networks. Proceedings of the 6th International Conference on Information Processing in Sensor Networks (IPSN), 2007.
8. A. Nguyen, N. Milosavljević, Q. Fang, J. Gao, L. J. Guibas. Landmark Selection and Greedy Landmark-Descent Routing for Sensor Networks. Proceedings of the 26th IEEE Conference on Computer Communications (INFOCOM), 2007.

9. S. Funke, N. Milosavljević. Guaranteed-delivery Geographic Routing Under Uncertain Node Locations. Proceedings of the 26th IEEE Conference on Computer Communications (INFOCOM), 2007.
10. S. Funke, N. Milosavljević. Network Sketching or: "How Much Geometry Hides in Connectivity? – Part II". Proceedings of the 18th ACM-SIAM Symposium on Discrete Algorithms (SODA), 2007. Presented at INFORMS Annual Meeting 2009.
11. S. Funke, N. Milosavljević. Infrastructure-Establishment from Scratch in Wireless Ad-Hoc Networks. Proceedings of the 1st IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), 2005.

### Awards and Honors

08/2008	Siebel Fellowship
03/2003	Best student in 2002, University of Belgrade
12/2002	Award for exceptional undergraduate accomplishment, SoEE alumni association
12/2002	Best student in the Division of Electronics, Telecommunications and Automatics, SoEE
02/2002	Scholarship, Karađorđević Family Foundation
01/2002	Award for excellent academic performance, Serbian Ministry of Education
09/2000	Award for excellent academic performance, Embassy of Norway in Belgrade
1998–2002	Scholarship, Serbian Ministry of Education, Foundation for Young Artists and Scientists

### Research

10/2009–present	Postdoctoral researcher, Max Planck Institut für Informatik, Saarbrücken, Germany.
01/2004–09/2009	Research assistant, Geometric Computing Lab, Stanford University Advisor: Prof. Leonidas Guibas.
07/2007–09/2007	Summer internship, Hewlett-Packard Labs, Palo Alto, CA. Mentor: Robert Schreiber. Worked on algorithms for the biclique cover problem for clustering and compressing bipartite graphs, applied to access database management and role discovery.
11/2005, 09/2006	Research visits to the Max-Planck Institut für Informatik, Saarbrücken, Germany. Mentor: Stefan Funke. Worked on algorithms for topology discovery in location-unaware wireless networks.
01/2003–06/2003	Semester project, Algorithmics Lab, Swiss Federal Institute of Technology Lausanne. Mentor: Amin Shokrollahi. Studied and implemented algorithms for factoring polynomials over finite fields, and list-decoding algorithms for Reed-Solomon codes.
09/2002–12/2002	Visiting research assistant, Division of Engineering and Applied Sciences, Harvard University, Cambridge, MA. Mentor: Aleksandar Kavčić. Worked on iterative decoding schemes for LDPC codes.
09/2001–05/2002	Course projects, School of Electrical Engineering, University of Belgrade. LCD technology survey, neural network-based handwritten digit recognition system, fuzzy logic-based image enhancement algorithm.

### Teaching

04/2007–06/2007	Teaching assistant, CS154 Introduction to Automata and Complexity Theory, CS Department, Stanford University.
04/2006–07/2006	Teaching assistant, CS368 Geometric Algorithms, CS Department, Stanford University.
01/2005–04/2005	Teaching assistant, CS348A Geometric Modelling, CS Department, Stanford University.
09/2000–06/2002	Lab assistant, Electronics Lab, School of Electrical Engineering, University of Belgrade.

### Professional Activities

Reviewer for networking conferences/journals: IPSN, Globecom, ACM Transactions on Sensor Networks, ICCCN, Wireless Networks.

Reviewer for CS theory conferences/workshops: ALENEX, SoCG, STOC.

**Patent**

A. Ene, N. Milosavljević, R. Schreiber, R. Tarjan and M. Shah. Method for Exact Biclique Cover of a Bipartite Graph. U.S. patent pending.

**Other Employment**

09/2001–12/2001 Intern, Computer Center, Universidad Pontificia Comillas, Madrid, Spain.  
Worked on network administration, computer support and maintenance.

**Language Proficiency**

Serbian native, English fluent.

**Programming**

C++, Java, Matlab,  $\LaTeX$ , HTML.