

JELENA DIAKONIKOLAS

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maiden name: Marašević

RESEARCH INTERESTS

Optimization, algorithms, networking, wireless systems.

ACADEMIC APPOINTMENTS

- Postdoctoral Scholar and Simons-Berkeley Research Fellow* **2018–2019**, UC Berkeley, Berkeley, CA,
Simons Institute for the Theory of Computing: Program on Foundations of Data Science,
UC Berkeley Foundations of Data Analysis Institute
- Postdoctoral Associate* **2016–2018**, Boston University, Boston, MA,
College of Arts and Sciences, Department of Computer Science
Host: Prof. Lorenzo Orecchia
- Visiting Scholar* **Fall 2017**, Simons Institute for the Theory of Computing, Berkeley, CA
Program on Bridging Continuous and Discrete Optimization
- Visiting Scholar* **2016–2017**, Massachusetts Institute of Technology, Cambridge, MA
Laboratory for Information & Decision Systems
Host: Prof. Eytan Modiano

EDUCATION

- Ph.D. in Electrical Engineering* **2012–2016**, Columbia University, New York, NY
Graduate School of Arts and Sciences, Department of Electrical Engineering
Cumulative GPA: 4.11/4.0, M.Phil. awarded in Oct. 2015
Thesis: Resource Allocation in Wireless Networks: Theory and Applications
Advisors: Prof. Gil Zussman and Prof. Cliff Stein
- M.S. in Electrical Engineering* **2011–2012**, Columbia University, New York, NY
School of Engineering and Applied Science, Department of Electrical Engineering
Final GPA: 4.09/4.0
Master of Science Award of Excellence
- B.S. in Electrical Engineering and Computing* **2007–2011**, University of Belgrade, Belgrade, Serbia
School of Electrical Engineering
Major: Communication Systems and Microwave Engineering
Final GPA: 9.82/10.0 (top 2%)
Thesis: Antenna Array Optimization Using a Genetic Algorithm
Thesis advisor: Prof. Dragan Olćan

AWARDS & HONORS

- Fellowship Awards* **2018**, Simons-Berkeley Research Fellowship and Microsoft Research Fellowship,
[Foundations of Data Science](#) program
2015, [Qualcomm Innovation Fellowship](#)
2010, Government of the Republic of Serbia, Ministry of Youth and Sports, *Dositeja*
Fellowship
(Awarded annually to top 1% of senior undergraduate students from Serbian universities.)
2009, Government of the Republic of Serbia, Ministry of Education and Science – Republic
Foundation for the Development of Scientific and Artistic Youth Fellowship
(Awarded annually to 35 students from all engineering schools in Serbia.)
- Academic Honors* **2017**, [Morton B. Friedman Memorial Prize for Excellence at Columbia Engineering](#)

	2017, Columbia University, EE dept. Collaborative Research Award
	2013, Columbia University, EE dept. Master of Science Award of Excellence
	2013, Columbia University, EE dept. Jacob Millman Prize for Excellence in Teaching Assistance
Recognitions	2016, Networking Networking Women, 10 Women in Networking/Communications That You Should Watch
	2015, MIT EECS Rising Star
Best Paper Award	2013, GENI GREE2013 Best Educational Paper Award
Scholarship Awards	2013, Dr Miloš Babić Scholarship Award (Awarded annually to one student from the City of Kraljevo, Serbia.)
	2012, Yahoo! Yodel Your Thoughts Scholarship Award
Leadership Awards	2010, Microsoft Student Partners, Most Valuable Partner (MVP MSP) (Awarded annually to one MSP out of all active MSPs from Serbia.)
Competitions	2010, <i>Elektrijada</i> , Čanj, Montenegro, 1 st place in Telecommunications
	2009, <i>Elektrijada</i> , Budva, Montenegro, 2 nd place in Fundamentals of Electrical Engineering (<i>Elektrijada</i> is the largest annual electrical engineering students' meeting in Europe. It gathers over 2000 students from about 30 schools, and includes various competitions.)

PUBLICATIONS

Working Papers/In Submission	J. Diakonikolas and L. Orecchia, "The Approximate Duality Gap Technique: A Unified Theory of First-Order Methods," 2017. <i>In submission</i> . Available at: https://arxiv.org/abs/1712.02485 .
	J. Diakonikolas and L. Orecchia, "Solving Packing and Covering Linear Programs in $\tilde{O}(\epsilon^{-2})$ Distributed Iterations with a Single Algorithm and Simpler Analysis," arXiv preprint, arXiv:1710.09002, 2017.
	J. Diakonikolas, M. Fazel, L. Orecchia, "Width-Independence Beyond Linear Objectives," working paper, 2018.
Conference Proceedings & Refereed Workshops	M. B. Cohen, J. Diakonikolas, L. Orecchia, "On Acceleration with Noise-Corrupted Gradients," in Proc ICML'18, 2018, to appear.
	J. Diakonikolas, L. Orecchia, "Alternating Randomized Block Coordinate Descent," in Proc. ICML'18, 2018, to appear.
	J. Diakonikolas and L. Orecchia, "Accelerated Extra-Gradient Descent: A Novel Accelerated First-Order Method," in Proc. ITCS'18, 2018.
	T. Chen, J. Diakonikolas, J. Ghaderi, G. Zussman, "Hybrid Scheduling in Heterogeneous Half- and Full-Duplex Wireless Networks" in Proc. IEEE INFOCOM'18, 2018.
	J. Marašević, C. Stein, G. Zussman, "A Fast Distributed Stateless Algorithm for α -Fair Packing Problems," in Proc. ICALP'16, 2016.
	J. Marašević, T. Chen, J. Zhou, N. Reiskarimian, H. Krishnaswamy, and G. Zussman, "Full-Duplex Wireless: Algorithms and Rate Improvement Bounds for Integrated Circuit Implementations," In Proc. ACM HotWireless'16, Oct. 2016, invited paper .
	H. Krishnaswamy, G. Zussman, J. Zhou, J. Marašević, T. Dinc, N. Reiskarimian, and T. Chen, "Full-Duplex in a Hand-held Device - From Fundamental Physics to Complex Integrated Circuits, Systems, and Networks: An Overview of the Columbia FlexICoN Project," In Proc. Asilomar'16, 2016, invited paper .
	J. Marašević, G. Zussman, "On the Capacity Regions of Single-Channel and Multi-Channel Full-Duplex Links," In Proc. ACM MobiHoc'16, 2016.
	J. Marašević, J. Zhou, H. Krishnaswamy, Y. Zhong, G. Zussman, "Resource Allocation and Rate Gains in Practical Full-Duplex Systems," In Proc. ACM SIGMETRICS'15, 2015.

J. Marašević, C. Stein, G. Zussman, "Max-min Fair Rate Allocation and Routing in Energy Harvesting Networks: Algorithmic Analysis," In Proc. ACM MobiHoc'14, 2014.

J. Marašević, J. Janak, H. Schulzrinne, G. Zussman, "WiMAX in the Classroom: Designing a Cellular Networking Hands-on Lab," In Proc. The Second GENI Research and Educational Experiment Workshop (GREE2013), Mar. 2013, **Best Educational Paper Award**.

*Journal and
Magazine
Publications*

N. Reiskarimian, T. Dinc, J. Zhou, M. B. Dastjerdi, T. Chen, J. Diakonikolas, G. Zussman, H. Krishnaswamy, "Integrated Antenna Interfaces and Magnetic-Free Non-Reciprocal Components for Full Duplex Wireless," *accepted to IEEE Microwave Magazine*, 2018, **invited paper**.

J. Marašević and G. Zussman, "On the Rate Regions of Single-Channel and Multi-Channel Full-Duplex Links," *IEEE/ACM Transactions on Networking*, vol. 26, no. 1, pp. 47-60, Feb. 2018.

J. Zhou, N. Reiskarimian, J. Diakonikolas, T. Dinc, T. Chen, G. Zussman, H. Krishnaswamy, "Integrated Full-Duplex Radios," *IEEE Communications Magazine*, vol. 55, no. 4, pp. 142-151, 2017, **invited paper**.

J. Marašević, C. Stein, G. Zussman, "Max-min Fair Rate Allocation and Routing in Energy Harvesting Networks: Algorithmic Analysis," *Algorithmica*, vol. 78, no. 2, pp. 521-557, 2017.

J. Marašević, J. Zhou, H. Krishnaswamy, Y. Zhong, G. Zussman, "Resource Allocation and Rate Gains in Practical Full-Duplex Systems," *IEEE/ACM Transactions on Networking*, vol. 25, no. 1, pp. 292-305, Feb. 2017.

*Non-Refereed
Workshops*

J. Zhou, J. Marašević, G. Zussman, H. Krishnaswamy, "Co-design of Full-duplex RFIC and Resource Allocation Algorithms," *IEEE Power Amplifier Symposium*, Sept. 2015.

Demos

T. Chen, J. Zhou, M. B. Dastjerdi, J. Diakonikolas, H. Krishnaswamy, G. Zussman, "Demo Abstract: Full-Duplex with a Compact Frequency Domain Equalization-based RF Canceller," in Proc. IEEE INFOCOM'17, 2017.

T. Chen, J. Zhou, N. Grimwood, R. Fogel, J. Marašević, H. Krishnaswamy, G. Zussman, "Demo: Full-Duplex Wireless based on a Small Form-Factor Analog Self-Interference Canceller," in Proc. ACM MobiHoc'16, 2016.

T. Chen, J. Zhou, J. Marasevic, H. Krishnaswamy, and G. Zussman, "Double-Talk: Full-Duplex Wireless for Next-Generation Communications," presented at NYC Media Lab's Annual Summit, Columbia University, New York, NY, 2016, **Honorable Mention Award**.*
*Selected among the total of 13 awarded demos out of about 140 presented demos.

TALKS

WoLA **June 2018**, "Block Coordinate Descent and Exact Minimization," *Workshop on Local Algorithms*, MIT, Cambridge, MA, **invited talk**

USC **May 2018**, "Conservation Laws and First-Order Optimization: Novel Insights and Algorithms," *University of Southern California*, Los Angeles, CA, **ISE colloquium talk**

U. Wisconsin-Madison **April 2018**, "Conservation Laws and First-Order Optimization: Novel Insights and Algorithms," *University of Wisconsin-Madison*, Madison, WI, **CS colloquium talk**

Dartmouth **March 2018**, "Conservation Laws and First-Order Optimization: Novel Insights and Algorithms," *Thayer School of Engineering at Dartmouth*, Hanover, NH, **special seminar**

Schloss Dagstuhl **March 2018**, "Fairness, Congestion Control, and Scheduling," *Schloss Dagstuhl Seminar on Scheduling*, Wadern, Germany, **invited talk**

MSR **February 2018**, "A Unifying Theory of First-Order Methods and Applications," *Microsoft Research*, Redmond, WA, **invited talk**

USC **April 2017**, "From Networked Systems to Theory and Back: Full-Duplex Wireless and Beyond," *University of Southern California*, Los Angeles, CA, **CS colloquium talk**

- Caltech* **April 2016**, "A Fast Distributed Algorithm for α -Fair Packing Problems," *Caltech*, Pasadena, CA, **RSRG seminar**
- Bell-Labs* **November 2015**, "Full-Duplex Wireless: Resource Allocation and Rate Gains for Realistic Hardware Models," *Bell-Labs*, Murray Hill, NJ, **invited talk**
- Google Research* **June 2015**, "A Fast Distributed Algorithm for α -Fair Packing Problems," *Google Research*, New York, NY, **invited talk**
- USC* **May 2015**, "Full-Duplex Wireless: Resource Allocation and Rate Gains for Realistic Hardware Models," *University of Southern California*, Los Angeles, CA, **CS colloquium talk**
- MSR* **May 2015**, "A Fast Distributed Algorithm for α -Fair Packing Problems," *Microsoft Research Redmond Theory Group*, Redmond, WA, **invited talk**
- UCSB* **May 2015**, "Full-Duplex Wireless: Resource Allocation and Rate Gains for Realistic Hardware Models," *UCSB*, Santa Barbara, CA, **CS colloquium talk**
- GENI* **March 2014**, "GENI in the Classroom: Teaching Cellular Networking with WiMAX Hands-on Labs," *19th GENI Engineering Conference (GEC19)*, Atlanta, GA, **invited talk**
- Conference Presentations* **2013–2018**, Conference and workshop presentations: *ITCS'18*, *ACM HotWireless'16*, *ICALP'16*, *ACM MobiHoc'16*, *ACM SIGMETRICS'15*, *ACM MobiHoc'14*, *GENI GREE2013*

GRANT PREPARATION

- NSF EARS* **9/15/2015–9/14/2018**, National Science Foundation, "EARS: Cross Layering in Full Duplex - from Integrated Circuits to Networking"
Amount awarded: \$608K
Contribution: Assisted PIs Gil Zussman, Harish Krishnaswamy, and Yuan Zhong in writing and preparing the grant proposal.
- QInF* **9/2015–9/2016**, Qualcomm Inc., "Realizing the Full-duplex Potential of OFDM-based Networks: From Circuits to MAC Layer"
Amount awarded: \$100k
Contribution: My collaborator Jin Zhou and I envisioned and wrote this proposal.

MENTORING AND ADVISING

- High school* **Summer 2014**, Caroline Schiavo, energy-harvesting project, high school student at Kent Place School, NJ (now an undergrad at George Washington University)
- Undergraduate* **Fall 2015–Spring 2016**, Nicole Grimwood, full-duplex project, undergrad student at Columbia University (now a Ph.D. student at Stanford)
- Summer 2015**, Preetish Tilak, full-duplex project, undergrad student at Purdue University
- M.S.* **Spring 2018–Summer 2018**, Cheuk Yin Lin, nonconvex optimization, M.S. student at Boston University
- Fall 2015–Spring 2016**, James Thompson, full-duplex project, M.S. student at Columbia University
- Summer 2015–Fall 2015**, Israel Fogel, full-duplex project, M.S. student at Columbia University

TEACHING EXPERIENCE

- 2011–2015** Columbia University, New York, NY
- Teaching Assistant* **Fall 2015**, ELEN E6950 Wireless & Mobile Networking I
Spring 2014, ELEN E6951 Wireless & Mobile Networking II
Spring 2012, ELEN E6951 Wireless & Mobile Networking II
Fall 2011, ELEN E3801 Signals and Systems
Fall 2011, ELEN E3804 Signals and Systems Laboratory

<i>Course Manager</i>	<p>Summer 2014, ELEN E6951 Wireless & Mobile Networking II (CVN¹) Summer 2013, ELEN E6951 Wireless & Mobile Networking II (CVN) Spring 2013, ELEN E6951 Wireless & Mobile Networking II (CVN) Summer 2012, ELEN E6951 Wireless & Mobile Networking II (CVN) 2009–2011 University of Belgrade, Belgrade, Serbia</p>
<i>Teaching Assistant</i>	<p>Spring 2011, Foundations of Electrical Engineering Lab Fall 2010, Microwave Engineering Lab Spring 2010, Foundations of Electrical Engineering Lab Spring 2009, Foundations of Electrical Engineering Lab</p>
SERVICE AND OUTREACH	
<i>Thesis Committees</i>	2018 , MIT. Reader on Thomas Stahlbuhk’s PhD thesis committee.
<i>Program Committees</i>	<p>2018, ICNP’18. Technical program committee member. 2018, NETGCOOP’18. Technical program committee member.</p>
<i>Outreach</i>	<p>2015, SWE EEE. Participated as an experimenter and as a speaker in the outreach event “Engineering, Exploration, Experience” organized for high school girls by Society of Women Engineers at Columbia University. 2013–2015, <i>Girls Science Day</i>. Participated as an experimenter in an outreach event organized for middle school girls. 2014, GSTEM. Mentored a high school student for her research summer internship through NYU Girls’ Science, Technology, Engineering, and Mathematics program supported by the Alfred P. Sloan Foundation. 2013, <i>High school outreach</i>. Organized an outreach event at the Manhattan Center for Science and Mathematics in East Harlem. 2012/2013, <i>Everybody Wins!–Power Lunch program</i>. Volunteered in the reading program for elementary school children at Mosaic Preparatory Academy in East Harlem. 2012, <i>Dress for Success</i>. Co-organized a women-empowerment clothing drive at Columbia U.</p>
<i>Leadership</i>	<p>2017, Co-organized a reading group and a symposium on Spectral Graph Theory & Optimization at the Simons Institute for the Theory of Computing. 2016, Organized an N² Women meeting at ACM MobiHoc’16. 2014, Organized an N² Women meeting at ACM MobiHoc’14. 2013, Organized multiple career development events as the corporate chair of Graduate Society of Women Engineers in collaboration with the Center for Career Education at Columbia University. 2008–2011, As a Microsoft Student Partner (MSP) and MSP Lead for 2010/2011: organized over 15 Microsoft academic events and participated in organization of a Student Tech Club and local finals of coding competitions Bubble Cup an Imagine Cup; organized a course on functional programming at School of Electrical Engineering, University of Belgrade.</p>
<i>Journal Reviews</i>	2012–Present , <i>IEEE Transactions on Wireless Communications, IEEE Transactions on Mobile Computing, IEEE/ACM Transactions on Networking, IEEE Transactions on Control of Network Systems, Elsevier Ad Hoc Networks, IEEE Communication Letters, IEEE Transactions on Vehicular Technology, ACM Transactions on Embedded Computing Systems, Algorithmica</i>
<i>Conference Reviews</i>	2012–Present , <i>ACM SIGMETRICS, ACM MobiHoc, ACM MobiCom, IEEE INFOCOM, ACM PODC, EATCS ICALP, ACM-SIAM SODA, APPROX</i>
<i>Volunteering</i>	2012–2014 , <i>ACM STOC’14, IEEE INFOCOM’12, ACM SIGMETRICS’12</i>

¹ Columbia Video Network

PROFESSIONAL ACTIVITIES

*Workshops and
Seminars*

March 2018, Schloss Dagstuhl Seminar on Scheduling, Wadern, Germany
(Invited participant.)

May 2017, Launching Academics on the Tenure-Track: an Intentional Community in Engineering (LATTICE) Symposium, Seattle, WA
(Selected as a participant.)

October 2016, SIGMOBILE Visioning Workshop, New York, NY
(Invited participant.)

November 2015, MIT EECS Rising Stars Workshop, Cambridge, MA
(Selected as a participant.)

August 2015, 3rd Heidelberg Laureate Forum, Heidelberg, Germany
(Selected as one of the 200 young researcher participants, out of over 1400 applicants.)

May 2014, Women in Theory Workshop, co-located with ACM STOC '14, New York, NY
(Selected as a participant.)

May 2013, Summer School on Green Communications and Networking, Boston, MA
(Selected as a participant.)