Ivano NOTARNICOLA

PERSONAL DETAILS

AFFILIATION:	Department of Electrical, Electronic and Information Engineering
	University of Bologna, viale del Risorgimento 2, Bologna, 40136, Italy
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CURRENT POSITION

01 DEC 2018 – current	Postdoctoral Researcher within the ERC Starting Grant project OPT4SMART, University of Bologna, Bologna, Italy Research project: "Distributed methods for large-scale optimization with application to control and learning in cyber-physical networks".

EDUCATION

25 MAY 2018	Ph.D. in ENGINEERING OF COMPLEX SYSTEMS, Università del Salento, Lecce, Italy Summa cum laude *Thesis:* "Block-Coordinate Methods and Duality for Asynchronous, Big-Data and Constrained Distributed Optimization." *Advisors:* G. NOTARSTEFANO
22 JULY 2014	Master's Degree in COMPUTER ENGINEERING (LM32), Università del Salento, Lecce, Italy 110/110 cum laude *Thesis:* "Numerical Methods For Final-State Constrained Optimal Control Problems." *Advisors:* G. NOTARSTEFANO, F. ALLGÖWER, F.A. BAYER GPA: 29.6/30.0
18 OCT 2012	Bachelor's Degree in INFORMATION ENGINEERING (L8), Università del Salento, Lecce, Italy 110/110 cum laude *Thesis:* "Comparative Study of Kalman and Complementary Filters" *Advisor:* G. INDIVERI GPA: 29.3/30.0

Positions Held

Dec 2017 – Nov 2018	Postdoctoral Researcher, Università del Salento, Lecce, Italy
	Research project within the ERC Starting Grant project OPT4SMART: "Development of distributed optimization methodologies with applications to learning and control".
Dec 2016 – Mar 2017	Exchange Period at Purdue University (West Lafayette, IN, USA)
	Research scholar under the supervision of professor G. Scutari investigating and developing distributed algorithms for nonconvex big-data optimization.
Mar – Jun 2014	Exchange Period at University of Stuttgart (Stuttgart, Germany)
	Erasmus student under the supervision of professor F. Allgöwer for an Internship and the Master thesis research about optimal control.

Research Projects Participation

01 Dec 2017 – current	European research project – ERC Starting Grant
	Project acronym: OPT4SMART *Project title*: Distributed Optimization Methods for Smart Cyber-Physical Networks *Principal Investigator*: prof. G. Notarstefano *Position*: Postdoctoral Researcher
01 Nov 2015 – 30 Nov 2017	European research project – ERC Starting Grant
	Project acronym: OPT4SMART *Project title*: Distributed Optimization Methods for Smart Cyber-Physical Networks *Principal Investigator*: prof. G. Notarstefano *Position*: Ph.D. student

Awards

14 Sept 2018	Best Ph.D. Thesis in the field of Systems and Control Engineering from SIDRA (Italian Society of Professors and Researchers in Automation).
10 Dec 2017	The paper "I. Notarnicola, Y. Sun, G. Scutari, G. Notarstefano, Distributed Big-Data Optimization via Block Communications" is awarded one of the three Best Student Paper Award at 2017 IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), Curaçao, Dutch Antilles.
01 Oct 2012	Scholarship for outstanding academic achievements (1st position) from the Department of Engineering, Università del Salento, Lecce, Italy.

Teaching Experience

A.Y. 2018/2019	Teaching assistant for the Distributed Control Systems class by prof. G. NOTARSTEFANO, University of Bologna, 30 hours.
A.Y. 2016/2017	Teaching assistant for the Advanced Control Techniques class by prof. G. NOTARSTEFANO, Università del Salento, 21 hours.
A.Y. 2016/2017	Co-Advisor of A. Benevento's Master Thesis entitled *A Distributed Primal-Dual Algorithm for Nonlinear Optimization over Networks* (Advisor prof. G. NOTARSTEFANO, Università del Salento).
	Co-Advisor of G. Ruggiero's Bachelor Thesis entitled *Numerical Analysis of Linear Consensus Protocols for Distributed Systems* (Advisor prof. G. NOTARSTEFANO, Università del Salento)
A.Y. 2015/2016	Matlab implementation of optimization algorithms for the Advanced Control Techniques class by prof. G. NOTARSTEFANO, Università del Salento.

Software Proficiency

Advanced:	Matlab/Simulink (with Toolboxes), C/C++, MPI, Multithreading, ROS, Mathematica, Latex, Microsoft Office Suite.
Intermediate:	Python, Java (with Struts 2 and Hibernate), HTML/CSS, Bash
Basic:	Fortran, R, PHP, SQL

Publications

International Journal Articles

[1] I. Notarnicola, and G. Notarstefano, "Constraint Coupled Distributed Optimization: a Relaxation and Duality Approach," 2018, Provisionally accepted (2nd revision round) as regular paper for the *IEEE Transactions on Control of Network Systems*,

[2] I. Notarnicola, Y. Sun, G. Scutari, and G. Notarstefano, "Distributed Big-Data Optimization via Block-Iterative Gradient Tracking", 2018, Submitted for journal publication.

[3] I. Notarnicola, M. Franceschelli, and G. Notarstefano, "A duality-based approach for distributed min-max optimization," *IEEE Transactions on Automatic Control*, 2018 (to appear).

[4] I. Notarnicola, R. Carli, and G. Notarstefano, "Distributed partitioned big-data optimization via asynchronous dual decomposition," *IEEE Transactions on Control of Network Systems*, vol. 5, no. 4, pp. 1910–1919, 2018.

[5] I. Notarnicola and G. Notarstefano, "Asynchronous distributed optimization via randomized dual proximal gradient," *IEEE Transactions on Automatic Control*, vol. 62, no. 5, pp. 2095–2106, 2017.

International Conference Proceedings

[1] A. Camisa, I. Notarnicola, and G. Notarstefano, "A Primal Decomposition Method with Suboptimality Bounds for Distributed Mixed-Integer Linear Programming", in *IEEE 57th Conf. on Decision and Control*, (Miami Beach, FL, USA), pp. 3391-3396, 2018.

[2] A. Testa, I. Notarnicola, and G. Notarstefano, "Distributed Submodular Minimization over Networks: a Greedy Column Generation Approach", in *IEEE 57th Conf. on Decision and Control*, (Miami Beach, FL, USA), pp. 4945-4950, 2018.

[3] I. Notarnicola, Y. Sun, G. Scutari, and G. Notarstefano, "Distributed Big-Data Optimization via Block Communications", in *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing*, (Curaçao, Dutch Antilles), pp. 557–561, 2017.

[4] I. Notarnicola, Y. Sun, G. Scutari, and G. Notarstefano, "Distributed Big-Data Optimization via Block-Iterative Convexification and Averaging", in *IEEE 56th Conf. on Decision and Control*, (Melbourne, Australia), pp. 2281–2288, 2017.

[5] I. Notarnicola and G. Notarstefano, "A duality-based approach for distributed optimization with coupling constraints," in *IFAC World Congress*, (Toulouse, France), pp. 14891–14896, 2017.

[6] I. Notarnicola, M. Franceschelli, and G. Notarstefano, "A duality-based approach for distributed min-max optimization with application to demand side management", in *IEEE 55th Conf. on Decision and Control*, (Las Vegas, NV, USA), pp. 1877–1882, 2016.

[7] I. Notarnicola and G. Notarstefano, "A randomized primal distributed algorithm for partitioned and big-data non-convex optimization", in *IEEE 55th Conf. on Decision and Control*, (Las Vegas, USA), pp. 153–158, 2016.

[8] I. Notarnicola, F.A. Bayer, G. Notarstefano, and F. Allgöwer, "Final-State Constrained Optimal Control via a Projection Operator Approach", in *European Control Conference*, (Aalborg, Denmark), pp. 148–153, 2016.

[9] I. Notarnicola and G. Notarstefano, "Randomized dual proximal gradient for large-scale distributed optimization", in *IEEE 54th Conf. on Decision and Control*, (Osaka, Japan), pp. 712–717, 2015.

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February 28, 2019

Ivano Notarnicola