

Novella Bartolini

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HIGHLIGHTS	<p>I am Associate Professor at the Department of Computer Science, Sapienza University of Rome¹. Since August 2014, I have been on sabbatical leave, visiting the Computer Science and Engineering Department of Penn State University.</p> <p>I was awarded the prize “Sapienza Ricerca 2010” for my research on autonomous deployment of mobile sensors. This prize is awarded to the 20 best works all disciplinary areas carried out by researchers of Sapienza University of Rome.</p> <p>I won the Best Paper Award at the prestigious 17-th IEEE International Conference on Network Protocols (ICNP).</p> <p>I am NATO Partner Director of the Project “Hybrid Sensor Networks for Emergency Critical Scenarios” (2015-2018). I am also Principal Investigator of the Army Research Lab Project “Modeling and Robust Design of Dynamic Interdependent Networks” (2014-2015). I was also the leader of the research unit of Sapienza University of Rome of the Prin Project “Autonomic Security”.</p> <p>I am Senior Member of IEEE. I am currently in the Editorial Board of the journal Wireless Networks. Previously I was in the Editorial Board of the journal Computer Networks. I was General Chair of the conference QShine 2009. I was Program Chair of the workshops IEEE AAA-IDEA 2005, ACM AAA-IDEA 2006. I am in the steering committee of ICST AAA-IDEA 2009.</p> <p>My papers have been published by some of the most important conferences and journals in the area of computer networks, including IEEE INFOCOM, IEEE ICDCS, IEEE ICNP, IEEE/IFIP DSN, IEEE IWQoS, IEEE Transactions on Mobile Computing, ACM Transactions on Sensor Networks, IEEE Transactions on Wireless.</p> <p>I advised more than thirty theses at the BSc and MS level, and several PhD thesis.</p>	
EDUCATION	<p>PhD in Computer Science and Automation Engineering, University of Rome “Tor Vergata”, 2001 Thesis title: <i>Analytical models for the evaluation and optimization of QoS in wireless cellular networks</i></p> <p>Laurea degree (five years degree) in Computer Engineering, score: 100/100 with honors University of Rome “Tor Vergata”, 1997 Thesis title: <i>Performance optimization in wireless cellular networks by means of access control techniques</i></p>	
APPOINTMENTS	<p>Sapienza, University of Rome Computer Science Department <i>Associate Professor</i></p> <p>Penn State University Computer Science and Engineering Department <i>Visiting Professor</i> (on extended sabbatical leave from Sapienza)</p> <p>Sapienza, University of Rome Computer Science Department <i>Assistant Professor</i></p> <p>Tor Vergata, University of Rome Department of Computer Science, Systems and Production <i>Research and teaching assistant</i></p> <p>Tor Vergata, University of Rome Department of Computer Science, Systems and Production <i>PhD Grant</i></p> <p>CATSS center, University of Texas at Dallas <i>Visiting Scholar and Research Associate</i>, supervised by Prof. Imrich Chlamtac</p> <p>Fondazione Ugo Bordoni <i>Junior Researcher Grant</i></p>	<p>September 2015 – today</p> <p>August 2014 – today</p> <p>November 2002 – August 2015</p> <p>November 2000 – March 2002</p> <p>November 1997 – March 2002</p> <p>August 1999 – April 2000</p> <p>March 1997 – December 1997</p>

¹Sapienza University of Rome, founded in 1303, is one of the largest universities in Europe. It is ranked first in Italy and in the top 3% worldwide. The Computer Science Department of Sapienza is consistently ranked first among the CS departments in Italy, according to both national governmental and international rankings.

FUNDING AS PI	<p>Director of the NATO SPS Project SONiCS G4936 (2015-2018) - 450,000 USD <i>Hybrid Sensor Networks for Emergency Critical Scenarios</i></p> <p>PI of the US Army Research Lab Award W911NF-14-0610 (2014-2015) - 50,000 USD <i>Modeling and Robust Design of Dynamic Interdependent Networks</i></p> <p>co-PI of the Project MIUR PRIN (2011-2013) - 150,000 USD, personal share 34,000 USD <i>Topic: Autonomic Security</i></p> <p>Work Package Leader of the EU Project GENESI (2009-2012) <i>Topic: GrEen sensor NEtworks for Structural monItoring.</i></p> <p>Principal investigator of several yearly research projects funded by Sapienza University - personal share 35,000 + funding for PostDoc students <i>Various topics including heterogeneous sensor networks, green computing, high performance web systems and computer models of human fertility</i></p>
AWARDS	<ul style="list-style-type: none"> • Prize "Sapienza Ricerca 2010" for my work on autonomous deployment of mobile sensors. • Best Paper Award at the 17-th <i>IEEE International Conference on Network Protocols (ICNP 2009)</i> for the paper "Autonomous Deployment of Heterogeneous Mobile Sensors". This paper has also been awarded the prize for the Best PhD student paper of the Computer Science Department, from a student I advised.
TEACHING ACTIVITY	<ul style="list-style-type: none"> • MS course of <i>Performance of Computer Networks</i> (from 2011 to 2014) - taught in English • BS course of <i>Web Programming</i> (from 2004 to 2014) and <i>Computer Architecture</i> (2004) • Postgraduate course of <i>Autonomous systems</i> (2008) • Teaching assistant of <i>Computer Architectures</i> (from 2002 to 2008) and <i>Operating Systems</i> (2000)
SERVICES TO THE DEPARTMENT	<ul style="list-style-type: none"> • Advisor of about 20 undergraduate students, 12 graduate students, three PhD students and a PostDoc researcher. • Member of the committee for teaching and research activities of the PhD program from 2010 to 2014 (suspended for sabbatical leave) • Member of the committee for teaching and research activities of the graduate and undergraduate program from 2010 to 2014 (suspended for sabbatical leave) • Member of the evaluation committee for the laurea degree programs in computer science, in the period 2005-2008 • Member of the committee for customized academic curriculum, in the period 2002-2005 • Member of the PhD admission committee in 2009 and in 2004 • Member of several hiring committees for Sapienza University of Rome, and University of Modena and Reggio Emilia
INTERNATIONAL ACTIVITIES	<ul style="list-style-type: none"> • Senior Member of IEEE • General Chair of ICST QShine 2009 • Steering Committee member of ICST AAA-IDEA 2009 • Program co-chair of the Wireless Communications track of IEEE ICCAS 2008 • Program co-chair of ACM AAA-IDEA 2006 (with Virgilio Almeida) • Program co-chair of IEEE AAA-IDEA 2005 (with Lucy Cherkasova)
PROGRAM COMMITTEES	<ul style="list-style-type: none"> • Member of about thirty program committees of international conferences including IEEE SECON, IEEE ICDCS, IEEE ICAC, IEEE IC2E, IEEE ICC, IEEE QEST, IEEE VTC, IFIP Wireless Days.
EDITORIAL BOARDS	<ul style="list-style-type: none"> • Guest editor of the special issue of ACM/Springer Mobile Networks Journal on "Heterogeneous Networking", 2009 • Member of the editorial board of the journal ACM/Springer Wireless Networks Journal since 2008 • Member of the editorial board of the journal Elsevier Computer Networks in 2006-2007.

PUBLICATIONS

EDITED BOOKS

N. Bartolini, S. Nikolettseas, P. Sinha, V. Cardellini, A. Mahanti, “Quality of Service in Heterogeneous Networks”, Springer, *Lecture Notes of ICST*, ISBN: 978-3-642-10624-8

V. Almeida, **N. Bartolini**, G. Pacifici, “Advanced Architectures and Algorithms for Internet Delivery and Applications, 2006”, ACM Press, ISBN: 1-59593-505-3

N. Bartolini, L. Cherkasova, M. Colaajanni, “Advanced Architectures and Algorithms for Internet Delivery and Applications, 2005”, IEEE Computer Society, ISBN: 0-7695-2525-3

JOURNAL PAPERS

N. Bartolini, T. Calamoneri, S. Ciavarella, T. La Porta, S. Silvestri, “Autonomous mobile sensor placement in complex environments”, in *IEEE Transactions on Autonomous and Adaptive Systems*, in press (2017).

M. Lin, S. Silvestri, **N. Bartolini**, T. La Porta, “On Selective Activation in Dense Femtocell Networks”, in *IEEE Transactions on Wireless Communications*, Vol. 15, N. 10, 2016.

H. Khamfroush, **N. Bartolini**, T. La Porta, A. Swami, J. Dillman, “On Propagation of Phenomena in Interdependent Networks”, in *IEEE Transactions on Network Science and Engineering*, Vol. 3, N. 4, 2016.

N. Bartolini, S. Ciavarella, S. Silvestri, T. La Porta “On the vulnerabilities of Voronoi-based approaches to mobile sensor deployment”, in *IEEE Transactions on Mobile Computing*, in press (2016).

N. Bartolini, G. Bongiovanni, T. La Porta, S. Silvestri, “On the vulnerabilities of the virtual force approach to mobile sensor deployment”, in *IEEE Transactions on Mobile Computing*, Vol. 3, N. 11, 2014

N. Bartolini, A. Massini, S. Silvestri, “P&P: an Asynchronous and Distributed Protocol for Mobile Sensor Deployment”, in *ACM/Springer Wireless Networks*, Vol. 18, N. 4, 2012

N. Bartolini, T. Calamoneri, T. La Porta, C. Petrioli, S. Silvestri, “Sensor Activation and Radius Adaptation (SARA) in Heterogeneous Sensor Networks”, in *ACM Transactions on Sensor Networks*, Vol. 8, n. 3, 2012

N. Bartolini, T. Calamoneri, T. La Porta, S. Silvestri, “Autonomous deployment of heterogeneous mobile sensors”, in *IEEE Transactions on Mobile Computing*, Vol. 10, n.6, 2011

N. Bartolini, T. Calamoneri, A. Massini, S. Silvestri, “On adaptive density deployment to mitigate the sink-hole problem in mobile sensor networks”, in *ACM/Springer Mobile Networks and Applications*, Vol. 16, n. 1, 2011

N. Bartolini, T. Calamoneri, E. G. Fusco, A. Massini, S. Silvestri, “Push and Pull: autonomous deployment of mobile sensors for a complete coverage”, *ACM/Springer Wireless Networks*, Vol.16, n. 3, 2010

N. Bartolini, G. Bongiovanni, S. Silvestri, “Self-* through self-learning: overload control for distributed web systems”, *Elsevier Computer Networks*, Vol. 53, n. 5, 2010

N. Bartolini, “Session Based Access Control in Geographically Replicated Internet Services”, in *Elsevier Computer Networks*, 2006

N. Bartolini, E. Casalicchio, “A performance analysis of context transfer protocols for QoS enabled Internet services”, in *Elsevier Computer Networks*, 2006

N. Bartolini, E. Casalicchio, S. Tucci, “A walk through Content Delivery Networks”, Revised tutorial lectures, Performance Tools and Applications to Networked Systems, special issue in Springer, *Lecture Notes in Computer Science*, Vol. 2965, Novembre 2003

N. Bartolini, I. Chlamtac, “Improving Call Admission Control Procedures by Using Handoff Rate Information”, in John-Wiley, *Journal of Wireless Communications and Mobile Computing*, Vol.1, n.3, 2001

N. Bartolini, “Handoff and Optimal Channel Assignment for Wireless Cellular Networks”, in ACM/Kluwer Publishers, *Mobile Networks and Applications*, Vol. 6, n. 6, 2001

N. Bartolini, T. He, H. Khamfroush,, “Fundamental Limits of Failure Identifiability by Boolean Network Tomography”, in *IEEE Proceedings of the International Conference on Computer Communications* (IEEE INFOCOM 2017)

S. Ciavarella, **N. Bartolini**, H. Khamfroush, T. La Porta, “Progressive Damage Assessment and Network Recovery after Massive Failures”, in *IEEE Proceedings of the International Conference on Computer Communications* (IEEE INFOCOM 2017)

T. He, **N. Bartolini**, H. Khamfroush, I. Kim, L. Ma, T. La Porta, “Service Placement for Detecting and Localizing Failures Using End-to-End Observations”, in *Proceedings of the 36th IEEE International Conference on Distributed Computing Systems* (IEEE ICDCS 2016)

N. Bartolini, S. Ciavarella, T. La Porta, S. Silvestri, “Network Recovery after Massive Failures”, in *Proceedings of IEEE/IFIP International Conference on Dependable Systems and Networks* (IEEE/IFIP DSN 2016)

M. Lin, **N. Bartolini**, T. La Porta, “Power Adjustment and Scheduling in OFDMA Femtocell Networks”, in *IEEE Proceedings of the International Conference on Computer Communications* (IEEE INFOCOM 2016)

Z. B. Celik, N. Hu, Y. Li, N. Papernot, P. McDaniel, R. Walls, J. Rowey, K. Levitty, **N. Bartolini**, T. F. La Porta, A. Swami, and R. Chadhax, “Mapping Sample Scenarios to Operational Models”, in *Proceedings of the International Conference for Military Communications* (MILCOM 2016)

M. Lin, S. Silvestri, **N. Bartolini**, T. La Porta, “Energy-Efficient Selective Activation in Femto-cell Networks”, in *IEEE Proceedings of the International Conference on Mobile Ad hoc and Sensor Systems* (IEEE MASS 2015)

N. Hu, T. La Porta, **N. Bartolini**, “Self-Adaptive Resource Allocation for Event Monitoring with Uncertainty in Sensor Networks”, in *IEEE Proceedings of the International Conference on Mobile Ad hoc and Sensor Systems* (IEEE MASS 2015)

N. Bartolini, G. Bongiovanni, T. La Porta, S. Silvestri, F. Vincenti, “Voronoi-based Deployment of Mobile Sensors in the Face of Adversaries”, in *IEEE Proceedings of the International Conference on Communications* (IEEE ICC 2014)

N. Bartolini, T. Calamoneri, T. La Porta, S. Silvestri, “GREASE: grid and release, deployment of mobile sensors in an unknown environment”, in *IEEE Proceedings of the International Conference on Computer Communications, miniconference* (IEEE INFOCOM 2010)

N. Bartolini, T. Calamoneri, T. La Porta, A. Massini, S. Silvestri, “Autonomous deployment of heterogeneous mobile sensors”, in *IEEE Proceedings of the International Conference on Network Protocols* (IEEE ICNP 2009) - **Best Paper Award**

N. Bartolini, T. Calamoneri, A. Massini, S. Silvestri, “Variable density deployment and topology control for the solution of the sink-hole problem”, in *ICST Proceedings of the international Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness* (QShine 2009)

N. Bartolini, A. Massini, S. Silvestri, “Self-deployment of mobile sensors for complete and uniform coverage of a target area”, in *ACM Proceedings of the International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems* (ACM MSWiM 2009)

- N. Bartolini**, T. Calamoneri, E. Fusco, A. Massini, S. Silvestri, “Autonomous deployment of self-organizing mobile sensors for a complete coverage”, in *IEEE Proceedings of the International Workshop on Self-Organizing Systems* (IEEE IWSOS 2008)
- N. Bartolini**, T. Calamoneri, E. Fusco, A. Massini, S. Silvestri, “Snap and Spread: a self-deployment algorithm for mobile sensor networks”, short paper in *IEEE Proceedings of the International Conference on Distributed Computing in Sensor Systems* (IEEE DCOSS 2008)
- N. Bartolini**, G. Bongiovanni, S. Silvestri, “A Self-* overload control for distributed web systems”, in *IEEE Proceedings of the International Workshop on Quality of Service* (IEEE IWQoS 2008)
- N. Bartolini**, G. Bongiovanni, S. Silvestri, “An autonomic admission control policy for distributed web systems”, in *IEEE Proceedings of the International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems* (IEEE MASCOTS 2007)
- N. Bartolini**, G. Bongiovanni, S. Silvestri, “Distributed Server Selection and Admission Control in Replicated Web Systems”, in *IEEE Proceedings of the International Symposium on Parallel and Distributed Computing* (IEEE ISPDC 2007)
- N. Bartolini**, G. Bongiovanni, S. Silvestri, “An Adaptive Admission Control Policy for Geographically Distributed Web Systems”, in *ACM Proceedings of the International Conference on Scalable Information Systems* (ACM INFOSCALE 2007)
- N. Bartolini**, E. Tronci, “Optimizing Service Availability of an Internet Based Architecture for Infrastructure Protection”, in *Proceedings of the International Workshop on Complex Network and Infrastructure Protection* (CNIP 06)
- F. Lo Presti, **N. Bartolini**, C. Petrioli, “Dynamic Replica Placement and User Request Redirection in Content Delivery Networks”, in *IEEE Proceedings of the International Conference on Communications*, (IEEE ICC 2005)
- N. Bartolini**, E. Casalicchio, P. Campegiani, S. Tucci, “A Performance Study of Context Transfer Protocol for QoS Support”, in *Proceedings of the IEEE 19th International Symposium on Computer and Information Sciences*, (IEEE ISCIS 2004), *Lecture notes in Computer Science: Computer and Information Sciences*, Vol. 3280, Springer, Novembre 2004
- N. Bartolini**, E. Casalicchio, I. Chlamtac, “Session Based Access Control in Content Delivery Networks in Presence of Congestion”, in *IEEE Proceedings of the International Conference on Quality of Service in Heterogeneous Wired/Wireless Networks*, (IEEE QSHINE 2004)
- N. Bartolini**, E. Casalicchio, S. Tucci, “Optimal Mobility-Aware Admission Control in Content Delivery Networks”, in *IEEE/ACM Proceedings of the International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems*, (IEEE/ACM MASCOTS 2003)
- N. Bartolini**, F. Lo Presti, C. Petrioli, “Optimal Dynamic Replica Placement in Content Delivery Networks”, in *IEEE Proceedings of the International Conference on Networks*, (IEEE ICON 2003)
- N. Bartolini**, I. Chlamtac, “Call Admission Control in Wireless Multimedia Networks”, in *IEEE Proceedings of the Symposium on Personal, Indoor, Mobile and Radio Communications*, (IEEE PIMRC 2002)
- N. Bartolini**, “Improving Call Admission Control Procedures by Using Mobility-based Information”, *The Alpine Research and Development Laboratory for Networks and Telematics Workshop* (ARDENT 2000)

N. Bartolini, I. Chlamtac, '“Call Admission Control: Solution of a General Decision Model with State Related Hand-off Rate”, in *IEEE Proceedings of the Wireless Communication and Networking Conference*, (IEEE WCNC 2000)

N. Bartolini, “Optimal Channel Assignment in Mobile Cellular Networks”, in *IEEE/ACM Proceedings of the Workshop on Discrete Algorithms and Methods for Mobility*, (Dial-M 1997)