Chiara Petrioli, Biographical Sketch

• Professional preparation.

Ph.D. in Computer Engineering, Università degli Studi di Roma "La Sapienza," Italy, May 1998.
B.S. (summa cum laude) in Computer Science, Università degli Studi di Roma "La Sapienza," Italy, November 1993.

• Appointments.

November 2015–Present: Chair of the PhD Programme in Computer Science, Università degli Studi di Roma "La Sapienza," Roma, Italy.
September 2015–Present: Coordinator of ANVUR computer science SubGEV, in charge of the italian computer science research evaluation exercise (2015–2016).
March 2014–Present: Full Professor, Università degli Studi di Roma "La Sapienza," Roma, Italy.
Director, SENSES (SEnsor Networks and Embedded Systems) Lab.
Director, Cyber Physical Systems Lab, Center for Cyber Intelligence and Information Security.
Director, ICT Technologies for Cultural Heritage Lab, SAPERI & Co.
"La Sapienza" representative within the ARTEMIS Industry Association, the european association for R&D actors in Embedded Systems.
Founding partner of WSENSE S.r.l.
November 2006–February 2014: Associate Professor, Università degli Studi di Roma "La Sapienza," Roma, Italy.
March 2001–October 2006: Assistant Professor of Computer Science, Università degli Studi di Roma "La Sapienza," Roma, Italy.
May 1998–December 2000: Post-doc at the Telecommunication Engineering Department, Politecnico di Milano, Italy. Telecom/CSELT consultant contributing on proposals for the standardization bodies ETSI/BRAN and ETSI/SMG2.

• Selected major achievements.

1. TPC co-chair of IEEE INFOCOM 2016, the highest impact factor conference in computer science according to Microsoft Academic Search.

2. General chair of ACM SenSys 2013 (ACM Conference on Embedded Networked Sensor Systems). Member of ACM SenSys steering committee. ACM SenSys is ranked within the top 2% of the computer science conferences according to Microsoft Academic Search.

3. Member of the steering committee and of the editorial board of IEEE Transactions on Mobile Computing (2010-2013), the reference publication for the mobile networking and computing community.

4. Program co-chair of ACM MobiCom 2006 (The Annual International ACM Conference on Mobile Computing and Networking). Estimated impact among the publications in computer science: top 0,2% according to Microsoft Academic Search.

5. PI or co-PI of twenty European Communitity and Italian Government sponsored research projects, for a total of over $E5,500,000$ (personal share), in the last fifteen years.

• Synergistic activities.

1. *Service to the scientific community*.

   (a) Steering committees: Member of the steering committee of IEEE SECON (2014–Present); member of the steering committee of ACM SenSys (2006–2016); member of the steering commitee of IEEE Transactions on Mobile Computing (2010-2013); Mobiquitous steering committee member (2004–Present).

   (b) Editorial board memberships: Elsevier Computer Communications (2016–Present); ACM/Springer Wireless Networks journal (2002–2014), IEEE Transactions on Mobile Computing (2007–2013), IEEE Transactions on Vehicular Technology (2005–2007), Elsevier Ad Hoc Networks Journal (2002–2011), Wiley Wireless Communications & Mobile Computing (WCMC) Journal (2002–2011). Guest editor, together with D. Pompili, T. Melodia and L. Yang of the joint Elsevier Ad Hoc Networks and Elsevier Physical Communications special issue on "Advances in underwater Communications and Networks", 2015.

(c) Key positions in conference organizing committee: Program co-chair of IEEE INFOCOM 2016, San Francisco, USA; General Chair of ACM WUWNET 2014, Rome, Italy; Workshop co-chair of ACM MobiCom 2014, Maui, USA; Program co-chair of WinMee 2014, Hammamet,Tunisia; General chair of ACM SenSys 2013, Rome, Italy; Area chair of IEEE INFOCOM 2013, IEEE INFOCOM 2014, IEEE INFOCOM 2015 and IEEE INFOCOM 2017; Panel chair of IEEE MASS 2012, Las Vegas, USA; Program co-chair of IEEE SECON 2009, Roma, Italy; Program co-chair of ACM HealthNet 2007; Program co-chair of the ACM International Conference on Mobile Computing and Networking, MobiCom 2006; Program co-chair of MobiQuitous 2004; General co-chair of HealthNet 2008; General co-chair of MobiQuitous 2005.

(d) Executive committees: ACM SIGMOBILE executive committee member (2005-2009);

(e) Organization and participation to panels: Organizer of the ESOF 2016 section on "Future technologies for our past"; Panelist at Netfutures 2016; Member of ESOF 2014 panel "Networks at the Edge of the World"; Panelist at IoT 360 (2014); Organizer of the ACM MobiCom 2008 panel on Cross-Domain Research: The Future of Mobile Computing and Networks; Member of IEEE PIMRC 2005, 2006 and 2010 panels on "Applications of Wireless Sensor Networks", "From sensor networks to smart dust" and "Large Scale Deployment of Wireless Sensor Networks: Challenges and opportunities".

(f) Member of the TPC of over eighty conferences such as: IEEE Infocom, ACM MobiCom, ACM MobiHoc, IEEE ICDCS, WWW, IEEE Percom, IEEE IPDPS, IEEE MASS, IEEE WCNC, IEEE Globecom, IEEE SECON, IEEE PIMRC, IEEE ICC, IEEE DCOSS, ACM WUWNET, IEEE OCEAN. Last three years TPC memberships in flagship conferences: INFOCOM (2017, 2016, 2015, 2014); ACM MobiCom (2017, 2015, 2014); ACM MobiHoc (2016, 2015); WWW 2017.

(g) Member of the national Ph.D. granting committee (Commissione finale di dottorato), University of Padova, 2008. This committee was in charge of evaluating the Ph.D. thesis of the candidates in the fields of control engineering, operative research and telecommunications engineering. Member of the national Ph.D. granting committee (Commissione finale di dottorato), Università di Roma III, 2014, PhD in mathematics. Member of the national Ph.D. granting committee, Università di Roma La Sapienza, 2015, PhD in computer engineering. Member of the national Ph.D. granting committee, Università degli studi di Trento, 2015, PhD in computer science. Member of PhD granting committees at University of Twente and Imperial College, 2015.

(h) Member of the selection committee for three faculty positions in computer science (role: Associate Professor) at the University of Milan (2015-2016); Chair of the selection committee for four positions in computer science and engineering (role: tenured researcher) at CNR (2016); Chair of the selection committee for one faculty position in Computer Science (role: RTDB-equivalent to tenure track associate professorship), University of Rome La Sapienza, Dept. of Statistics (2016-2017).

(i) Senior member of the IEEE.

2. *Services to the Department.*

(a) Coordinator of the PhD Programme in Computer Science (2015–);

(b) Member of the Computer Science department fundraising committee (2003–2006 and 2009–Present);

(c) Member of La Sapienza spinoff committee (in charge of selecting which spinoffs to sponsor at the university level, and of the spinoff ex post evaluation) (2010–2014);

(d) Member of La Sapienza Senate (Senato Accademico) (2012-2013); Member of the Senate (Consiglio Accademico) of La Sapienza "Ateneo Federato delle Scienze e delle Tecnologie (AST)." AST combines several colleges in the field of science and technology including the College of Science and College of Engineering (2006); Member of La Sapienza Senato Accademico Integrato (2002–2006);

(e) Member of the committee in charge of designing the procedures for the quantitative evaluation of the quality of the scientific activities (Nucleo di Valutazione di Facoltà) for the College of Information and Communication Technology and Statistics (2011–2013) and for the College of Science (2007–2010);

(f) Member of La Sapienza Computer Science Department master program committee in charge of designing the Computer Science department second level degree teaching offer (2002–2004);

(g) Member of the Computer Science Ph.D. program entering examination committee (2002 and 2013).

• **Teaching and advising.** Professor Petrioli has taught two dozens of undergraduate and graduate classes (Wireless Systems, Foundations of Programming, Advanced Topics in Networking, Programming Languages I, Computer Networks I, Design and Optimization of Wireless Systems, Internet of Things). She has been the Master Thesis advisor of over two dozen students and the advisor of sixteen Ph.D. students (eleven graduated already and five in progress).

Among my master and PhD students Dora Spenza was the recepient of the Google Europe Doctorate Fellowship in Wireless Networking and Ariona Shashaj was recepient of an IBM master thesis award.

• **Awards.**

1. The SUNRISE project I coordinate got the NT100 award, being listed in the top 100 global social tech changing our lives in 2016.

2. The demo "SUNRISE project: The Internet of Underwater Things.", co-authored by Daniele Spaccini, Roberto Petroccia, Chiara Petrioli, Ricardo Martins, Joo Borges de Sousa, Renato Caldaz, Tommaso Arzilli, Davide Lamanna, Alessandro Galizia and Enrico Renzi, won the best demo award at ACM WUWNET 2014.

3. The demo "Time Synchronization and Localization for Underwater Acoustic Sensor Networks with the SUNSET Framework.", co-authored by C. Petrioli, R. Petroccia, D. Spaccini, received the best demo award at ACM WINTECH 2013.

4. The paper "Energy-harvesting WSNs for structural health monitoring of underground train tunnels", co-authored by A. Cammarano, D. Spenza, C. Petrioli was recipient of the best student poster award at IEEE INFOCOM 2013.

5. Winner of a Fulbright scholarship (1995).

• **Funded research and project review activity.** PI and co-PI of over 20 European Communitity and Italian Government sponsored projects, for a total of over $E5,500,000$ (personal share). Projects include: Horizon 2020 EASME/EMFF ARCHEOSub (Autonomous underwater Robotic and sensing systems for Cultural Heritage discovery cOnServation and in sitU valorization, 2017-2019), as coordinator at the European level; IP FP7 SUNRISE (Sensing, monitoring and actuating on the underwater world through a federated research infrastructure extending the future Internet, 2013–2016), as coordinator at the European level; FILAS SAFE-ART (Platform for real-time pervasive monitoring of mobile cultural heritage, 2015-2017); STREP FP7 TROPIC (Distributed computing, storage and radio resource allocation over cooperative femtocells, 2012-2015); STREP FP7 GENESI (GENESI: Green sEnsor NEtworks for Structural minItoring, 2010–2013), as coordinator at the European level; STREP FP7 CLAM (CoLlAborative eMbedded networks for submarine surveillance, 2010–2013); Artemis CHIRON (Cyclic and Person-centric Health Management: Integrated Approach for Home, Mobile and Clinical Environments, 2010–2013); SENSELAB (Testbed development of sensor networks for environmental monitoring, 2010); ARTEMIS eDiana (Embedded Systems for Energy Efficient Buildings, 2009–2011); ARTEMIS SOFIA (Smart Objects for Intelligent Applications, 2009–2011); Major Research Instrumentation project (Integration of outdoor and indoor testbeds, mobile robots and video surveillance systems, 2008–2011); STREP IST SENDORA (Sensor Network for Dynamic and Opportunistic Radio Access, 2008–2010); IP IST 215923 SENSEI (Integrating the Physical with the Digital World of the Network of the Future, 2008–2010); FILAS PITT nr. 270 STONE-NET STRUCTURAL MONITORING VIA SENSOR NETWORKS (2007–2008); IP IST E-Sense (Capturing Ambient Intelligence for Mobile Communications through Wireless Sensor Networks, 2006–2007); International FIRB (Integration of fundamental computer science theory and experimentation on wireless and mobile communications, 2006–2008); CA Embedded WiSeNts (Cooperating Embedded Systems for Exploitation and Control featuring Wireless Sensor Networks, 2004–2006); STREP IST SIMPLICITY (Secure, Internet-able Mobile Platforms Leading Citizens Toward Simplicity, 2004–2005); ITEA POLLENS (Platform for Open, Light, Legible, & Efficient Network Services, 2001–2003); STREP IST EYES (EnergY Efficient Sensor networks, 2002–2005); FIRB VICOM (Virtual Immersive COMmunications, 2002-2005).

Review panelist for research projects funded by the European Commission in the field of ocean science (BlueGrowth programme), network embedded systems and cyber physical systems, mobile computing, next generation Internet, future emerging technologies. Experience in all possible roles as EC reviewer: member of project selection panels, member of the annual review panel for both STREP and Integrated Projects, rapporteur, ex post reviewer in charge of assessing the effectiveness and results of an area of fundings. I have also participated to meetings to shape future calls, providing a possible strategic vision for the development of networked embedded systems and cyber physical systems

in future framework programmes. Reviewer for science foundations such as NWO, VINNOVA, Norway Research Council, Belgium Research Council, Icelanding Research Council.

• **Media coverage.** The FP7 projects GENESI and SUNRISE for which I serve as EC coordinator have been highlighted as success stories on the Digital Agenda of Europe website and on the site of the vice president of the European Commission. SUNRISE has been selected as champion for the EuFactor campaign of the italian representation of the European Commission. My research has been covered by major mass media, including, in the last three years: WIRED USA; New Scientists; The Guardian; Bild; EuroNews; National Geographic; CNN Greece; RAI Presa Diretta; RAI Superquark (twice); RAI TG Leonardo (twice); RAINews24; RadioRai Caterpillar; Radio24; Repubblica; Focus; Panorama; Sole24Ore; Corriere della Sera; CISCO Internet of Everything Web TV.

• **Publications.** Over 150 papers in prominent international conferences and journals with over 4550 citations, h-index=35, i10-index = 93 (according to "Google Scholar"). In the last five years: over 2270 citations; h-index=23, i10-index = 65.

For a complete list of recent publications see http://senseslab.di.uniroma1.it

Selected papers

1. S. Basagni, V. Di Valerio, P. Gjanci and C. Petrioli Finding MARLIN: Exploiting Multi-Modal Communications for Reliable and Low-latency Underwater Networking *in Proceedings of IEEE INFOCOM 2017*, May 2017.

2. G. Ateniese, G. Bianchi, A. Capossele, C. Petrioli and D. Spenza Low-cost Standard Signatures for Energy-Harvesting Wireless Sensor Networks Accepted for publication in *ACM Transactions on Embedded Computing Systems*, 2016.

3. A. Cammarano, C. Petrioli and D. Spenza Online Energy Harvesting Prediction in Environmentally-Powered Wireless Sensor Networks Accepted for publication in *IEEE Sensors Journal*, 2016.

4. I. Glaropoulos, M. Lagana', V. Fodor and C. Petrioli Energy Efficient COGnitive MAC for Sensor Networks under WLAN Co-existence *IEEE Transactions on Wireless Communications*, 2015.

5. D. Spenza, M. Magno, S. Basagni, M. Paoli, L. Benini and C. Petrioli Beyond Duty Cycling: Wake-up Radio with Selective Awakenings for Long-lived Wireless Sensing Systems *in Proceedings of IEEE INFOCOM 2015*, April 2015.

6. M. Bonuccelli, D. Ermini, L. Pescosolido and C. Petrioli Goodput Maximization in Opportunistic Spectrum Access Networks under Constraints on the Inter-Packet Transmission Waiting Time *Elsevier Ad Hoc Networks*, 2015.

7. A. Cammarano, F. Lo Presti, G. Maselli, L. Pescosolido and C. Petrioli Throughput-Optimal Cross-Layer Design for Cognitive Radio Ad Hoc Networks *IEEE Transactions on Parallel and Distributed Systems*, September 2015.

8. C Petrioli, R. Petroccia, J. R. Potter, and D. Spaccini The SUNSET framework for simulation, emulation and at-sea testing of underwater wireless sensor networks *Elsevier Ad Hoc Networks and Elsevier Physical Communications special issue on advances in underwater communications and networks*, 2015.

9. S. Basagni, C Petrioli, R. Petroccia, and D. Spaccini CARP: A Channel-aware Routing Protocol for Underwater Acoustic Wireless Networks *Elsevier Ad Hoc Networks and Elsevier Physical Communications special issue on advances in underwater communications and networks*, 2015.

10. S. Basagni, L. Boloni, P. Gjanci, C. Petrioli, C. Phillips and D. Turgut Maximizing the Value of Sensed Information in Underwater Wireless Sensor Networks via an Autonomous Underwater Vehicle *in Proceedings of IEEE INFOCOM 2014*, May 2014.

11. T. F. La Porta, C. Petrioli, C. Phillips and D. Spenza Sensor-mission assignment in rechargeable wireless sensor networks *ACM Transactions on Sensor Networks*, 2014.

12. D Porcarelli, D. Spenza, D. Brunelli, A. Cammarano, C. Petrioli and L. Benini Adaptive Rectifier Driven by Power Intake Predictors for Wind Energy Harvesting Sensor Networks *IEEE Journal of Emerging and Selected Topics in Power Electronics*, 2014.

13. C Petrioli, D. Spenza, P. Tommasino and A. Trifiletti A novel wake-up Receiver with Addressing Capability for Wireless Sensor Nodes *in Proceedings of IEEE DCOSS, Marina del Rey, USA*, May 2014.

14. G. Bianchi, A. Capossele, C. Petrioli and D. Spenza AGREE: exploiting energy harvesting to support data-centric access control in WSNs Accepted for publication in *Elsevier Ad Hoc Networks, Special Issue on Security, Privacy and Trust Management in the Internet of Things era (SePriT)*, 2013.

15. C. Petrioli, M. Nati, P. Casari, M. Zorzi and S. Basagni ALBA-R: Load-Balancing Geographic Routing Around Connectivity Holes in Wireless Sensor Networks *IEEE Transactions on Parallel and Distributed Systems*, 2013.

16. A. Camillo, M. Nati, C. Petrioli, M. Rossi and M. Zorzi IRIS: Integrated data gathering and interest dissemination system for wireless sensor networks *Elsevier Ad Hoc Networks, special issue on cross layer design in ad hoc and sensor networks*, 11, March 2013.

17. G. Ateniese, G. Bianchi, A. Capossele and C. Petrioli Low-cost Standard Signatures in Wireless Sensor Networks: A Case for Reviving Pre-computation Techniques? *in Proceedings of the* 20*th Annual Network and Distributed System Security Symposium (NDSS 2013)*, February 2013.

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

19. S. Basagni, C. Petrioli, R. Petroccia and M. Stojanovic Optimized Packet Size Selection in Underwater WSN Communications *IEEE Journal of Oceanic Engineering*, 37(3):pp 321–337, 2012.

20. S. Basagni, A. Carosi, C. Petrioli and C. Phillips. Coordinated and Controlled Mobility of Multiple Sinks for Maximizing the Lifetime of Wireless Sensor Networks *ACM/Springer Wireless Networks*, 17(3):759-778, April 2011.

21. T. F. La Porta, G. Maselli and C. Petrioli. Anti-collision Protocols for Single-Reader RFID Systems with Passive Tags *IEEE Transactions on Mobile Computing*, 10(2):267–279, February 2011.

22. S. Basagni. C. Petrioli, R. Petroccia. Efficiently Reconfigurable Backbones for Wireless Sensor Networks. *Elsevier Computer Communications, special issue on Algorithmic and Theoretical Aspects of Wireless Ad Hoc and Sensor Networks*, 31(4):668–698, March 2008.

23. S. Basagni, A. Carosi, E. Melachrinoudis, C. Petrioli, and Z. M. Wang. Controlled sink mobility for prolonging wireless sensor networks lifetime. *ACM/Springer Wireless Networks*, 14(6):831–858, December 2008.

24. D. Dubashi, O. Haggstrom, L. Orecchia, A. Panconesi, C. Petrioli, and A. Vitaletti. Localized techniques for broadcasting in wireless sensor networks. *Algorithmica*, 49(4), October 2007.

25. D. Dubashi, O. Haggstrom, G. Mambrini, A. Panconesi, and C. Petrioli. BluePleiades: A new solution for device discovery and scatternet formation in multi-hop Bluetooth networks. *ACM/Springer Wireless Networks*, 12(1):107–125, January 2007.

26. S. Basagni, M. Mastrogiovanni, A. Panconesi, and C. Petrioli. Localized protocols for ad hoc clustering and backbone formation: A performance comparison. *IEEE Transactions on Parallel and Distributed Systems*, 17(4):292–306, April 2006.

27. S. Basagni, R. Bruno, G. Mambrini, and C. Petrioli. Comparative performance evaluation of scatternet formation protocols for networks of bluetooth devices. *ACM/Kluwer Wireless Networks*, 10(2):197–213, March 2004.

28. C. Petrioli, S. Basagni, I. Chlamtac. BlueMesh: Degree-Constrained MultiHop Scatternet Formation for Bluetooth Networks, *ACM Mobile Networks and Applications (MONET)*, February 2004 .

29. C. Petrioli, S. Basagni, and I. Chlamtac. Configuring BlueStars: Multihop scatternet formation for Bluetooth networks. *IEEE Transactions on Computers, Special Issue on Wireless Internet*, 52(6):779–790, June 2003.

30. G. Bianchi, A. Capone and C. Petrioli Throughput Analysis of End-to-End Measurement-Based Admission Control in IP *in Proceedings of IEEE INFOCOM 2000*, March 2000.

31. I. Chlamtac, C. Petrioli, and J. Redi. Energy-conserving access protocols for identification networks. *IEEE/ACM Transactions on Networking*, 7(1):51–59, February 1999.