



## PERSONAL INFORMATION

Maria Laura Stefanizzi

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Sex Female | Date of birth 28 May 1982 | Nationality Italian

## WORK EXPERIENCE

01 June 2017 – Present

**Jr. Research Associate**

OPA - Ocean Predictions and Applications  
Euro-Mediterranean Centre on Climate Change Foundation (CMCC Foundation),  
Via Augusto Imperatore, 16  
73100 Lecce (Italy)

Design and development of post processing solutions for operational chains of ocean models.

Porting and re-engineering of operational chains in the frame of ocean models.

25 July 2016 – Present

**Business or sector** Software Development**Co-Founder SofThings s.r.l.**

SofThing s.r.l., spinoff company of the University of Salento (Lecce).  
c/o Department of Innovation Engineering  
SP6 Lecce-Monteroni, 73100, Lecce (Italy)

Design and development of customized smart applications, by exploiting the potentialities provided by the most used IoT emerging technologies, such as RFID, Bluetooth and Bluetooth Low Energy.

Main activities:

- Design and development of Android apps.
- Embedded software development by using TI SensorTag and ST-Nucleo boards.

**Business or sector** Software Development

01 July 2016 – 31 May 2017

**Post-Doctoral Research Fellow**

Department of Innovation Engineering, University of Salento (Lecce)  
SP6 Lecce-Monteroni, 73100 Lecce (Italy)

Innovative systems based on Bluetooth Low Energy technology for the development and testing of smart environments according to the Internet of Things concept.

Main activities:

- Design and development of Human Activity Recognition solutions by using wearable devices.
- Development of innovative smart environments based on mobile applications, BLE, RFID UHF, and Bluetooth technologies.
- Composition of project deliverables focused on activity recognition on embedded systems, within the EU research project City4Age - Elderly-friendly City services for active and healthy ageing.
- Tutor of Bachelor of Science thesis students for the University of Salento.

Business or sector Research and Innovation

17 July 2016 – 23 July 2016

### Lab assistant

Microsoft Summer School on the Internet of Things, Kazan (Russia)

Lab assistant for the course “Networked embedded software”.

Academic years 2017, 2016,  
2015, 2014

### Teaching support

Dept. of Innovation Engineering, University of Salento, Lecce (Italy)

Lectures on "Embedded Systems", "The Contiki Operating System", "Architectures and Protocols for the Internet of Things" and “Routing Algorithms” as part of the courses “Configurazione di reti e protocolli per l’Internet of Things” and “Reti di Calcolatori”, taught by Prof. Luigi Patrono, bachelor degree in Information Engineering - 18 hours.

01 September 2012 – 01  
July 2013

### Research Fellow

DiSteBA, University of Salento, Lecce (Italy)

Design and development of an innovative gapless traceability system for the fresh vegetables supply chain. The system was designed by exploiting the combined use of innovative Radio Frequency technologies, such as RFID and NFC, and important international standards, such as EPCglobal.

01 October 2012 – 31 March  
2013

### Curricular Internship

IDA Lab, University of Salento, Lecce (Italy)

Design and implementation of a Medium Access Control (MAC) protocols able to minimize the radio energy consumption in a Wireless Sensor Network, implemented in the Contiki O.S.

22 December 2008 – 22  
March 2009

### Research Assistant

Department of Innovation Engineering, University of Salento, Lecce (Italy)

Implementation of a gapless traceability system based on the EPCglobal standard for the pharmaceutical supply chain.

01 November 2006 – 01  
March 2007

### Curricular Internship

Network Laboratory, University of Salento, Lecce (Italy)

Definition and validation of an innovative vertical handover algorithm among heterogeneous wireless networks, using Network Simulator 2 (NS2) platform.

## EDUCATION

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02 July 2013 – 02 July 2016

### Ph.D. Course in Information Engineering

EQF level 8

Dept. of Innovation Engineering, University of Salento, Lecce (Italy)

Scholarship granted by Puglia Region and University of Salento.

Thesis (in English): *Emerging Technologies for the Internet of Things and the development of Smart Environments*

Date of Defense: 05/12/2016

The main research activity concerned the physical and logical integration of BLE, RFID, WSN technologies and their use in order to develop novel Smart Environments and applications, such as smart hospital, smart parking and innovative pervasive games.

01 May 2015 – 31 July 2015

### Visiting Ph.D. Student

Networked Embedded Systems Group (NES), Swedish Institute of Computer Science (SICS), Stockholm (Sweden).

The research activity concerned the performance evaluation of the architecture developed during the internship period at the Polytechnic of Milan.

01 November 2015 – 31 April 2015

### Visiting Ph.D. Student

DEpendable Evolvable Pervasive Software Engineering (DEEP-SE) Group, Department of Electronics, Information and Bioengineering (DEIB), Polytechnic of Milan, Milan (Italy).

The main research activity was focused on the definition and implementation of COIN, a new architectural solution having, as main peculiarity, the capability to simplify the interaction between personal mobile devices and embedded sensors and actuators. The system allows the run-time deployment of new applications on the embedded devices, by exploiting the Bluetooth Low Energy technology.

24 March 2007 – 18 April 2012

### Master Degree in Computer Engineering, Communication Networks

EQF level 7

University of Salento, Lecce (Italy).

Thesis: Definition and validation of an energy-efficient MAC scheduler for Wireless Sensor Networks, implemented on the Contiki Operating System.

Final grade: 110/110 cum laude.

The thesis work concerned the definition and implementation of a new MAC protocol able to reduce the power consumption in a Wireless Sensor Network. The solution was implemented on the Contiki OS and validated through test bed on different real devices.

01 November 2001 – 22 March 2007

### Bachelor Degree in Computer Engineering

EQF level 6

University of Lecce, Lecce (Italy).

Thesis: Definition of a vertical handover algorithm for heterogeneous wireless networks. Final grade: 108/110.

The defined algorithm was developed and validated using the Network Simulator NS-2

27 July 2001 – 15 August 2001

### Language and Leisure International Certificate

Rutgers University, New Jersey (United States)

English Language Studies. Level: Upper Intermediate

## TRAINING

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27 October 2015 – 30 October 2015

### PhD. Summer School “iot360 the gateway to innovation”

Rome (Italy).

40 hours - PhD. Course with final exam.

Main topics: Internet of Things enabling technologies and standards, Smart Cities concepts,

WaspMote.

1 April 2015 **Tutorial “Bluetooth Low Energy”**

University of Salento, Lecce (Italy).

4 hours - PhD. Course with final exam.

Main topics: Bluetooth Low Energy (BLE) protocol stack and applications, STM32 Nucleo boards.

17 December 2014 – 19 December 2014

**PhD. Course “Semantic Technologies: Cognitive Computing – Question Answering Technologies behind IBM Watson”**

Polytechnic of Milan, Milan (Italy).

20 hours - PhD. Course with final exam.

Main topics: Semantic Technologies, Cognitive Computing, Machine Learning Techniques.

06 July 2014 – 14 July 2014

**PhD. Summer School “ Network Design and Optimization: from theory to application”**

Lipari (Italy).

24 hours - PhD. Summer School with final exam.

Main topics: Protocol design, network optimization, wireless networking protocols.

07 May 2014 – 08 May 2014

**Tutorial “Workshop su standard GS1 per la tracciabilità, il B2B e il B2C”**

University of Salento, Lecce (Italy).

8 hours - PhD. Course with final exam.

Main topics: RFID, GS1 standards, B2C and B2B related concepts.

16 September 2013 – 20 September 2013

**PhD. Summer School “Internet of Things and Smart Cities”**

Lerici, (Italy).

40 hours - PhD. Summer School with final exam.

Main topics: Contiki OS, Internet of Things Architectures and Protocols, Smart Cities.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user

Common European Framework of Reference for Languages

Communication skills

– Team work: I work well with others. I collaborate with researchers with different professional skills and nationalities.

– Intercultural skills: Proven adaptability to different cultural environments. I work together with researchers of different nationalities using phone conversations and e-mail.

**Computer skills** Experience in designing new systems by exploiting the most used IoT enabling technologies, such as RFID, NFC, Wireless Sensor Network, Bluetooth Low Energy.

Knowledge of the following programming languages and frameworks: C, Python, Java, Android, PHP, PERL, Microsoft .Net Framework, NS-2 Network Simulator.

Experience in embedded systems development:

- Power management in IEEE 802.15.4.
- Bluetooth Low Energy
- ZigBee and 6LoWPAN networks
- IoT protocols, RPL, CoAP
- Device driver for embedded system
- Embedded RTOS
- Test bed on real devices (TelosB, XM1000, MB851 motes, ST Nucleo Board, TI SensorTag)

I'm also skilled in Mac and Linux operating systems and tools.

## ADDITIONAL INFORMATION

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### Publications

#### ***International Journals***

- [1] M.L. Stefanizzi, L. Mottola, L. Mainetti, L. Patrono, "COIN: Opening the internet of things to people's mobile devices", *IEEE Communications Magazine*, 55 (2), art. no. A1, pp. 20-26, 2017
- [2] L. Catarinucci, D. De Donno, L. Mainetti, L. Patrono, M. L. Stefanizzi, and L. Tarricone, (2017) "An IoT-aware Architecture to improve Safety in Sports Environments", *Journal of Communications Software and Systems*, Vol.13 No.2 June 2017.
- [3] L. Mainetti, I. Marasovic, L. Patrono, P. Solic, M. L. Stefanizzi, R. Vergallo, "A Novel IoT-aware Smart Parking System based on the integration of RFID and WSN technologies", *International Journal of RF Technologies: Research and Applications*, Volume 7, Issue 4, 13 September 2016, Pages 175-199, Scopus ID: 2-s2.0-84988664532.
- [4] L. Catarinucci, D. De Donno, L. Mainetti, L. Palano, L. Patrono, M. L. Stefanizzi, and L. Tarricone, "An IoT-Aware Architecture for Smart Healthcare Systems", *IEEE Internet of Things Journal*, 2015, Vol. 2, No. 6, pp. 515-526. DOI: 10.1109/IIOT.2015.2417684, (ISSN: 23274662)
- [5] D. De Donno, M. L. Stefanizzi, L. Catarinucci, L. Mainetti, L. Patrono, and L. Tarricone, "Integrating passive UHF RFID tags with WSN nodes: Challenges and opportunities," *Journal of Communications Software and Systems*, vol. 10, no. 2, pp. 99-106, 2014. (ISSN: 18456421), (SCOPUS: 2-s2.0-84911426554)
- [6] L. Catarinucci, R. Colella, G. Del Fiore, L. Mainetti, V. Mighali, L. Patrono, and M. L. Stefanizzi, "A cross-layer approach to minimize the energy consumption in wireless sensor networks," *International Journal of Distributed Sensor Networks*, vol. 2014, Article ID 268284, 2014. DOI: 10.1155/2014/268284, (ISSN: 15501329), (SCOPUS: 2-s2.0-84893859988), (ISI: 000330741400001)

- [7] L. Mainetti, L. Patrono, M. L. Stefanizzi, and R. Vergallo, "An innovative and low-cost gapless traceability system of fresh vegetable products using RF technologies and EPCglobal standard," *Computers and Electronics in Agriculture*, vol. 98, pp. 146-157, 2013. DOI: 10.1016/j.compag.2013.07.015, (ISSN: 01681699), (SCOPUS: 2-s2.0-84883426748), (ISI: 000326210600018)
- [8] L. Mainetti, F. Mele, L. Patrono, F. Simone, M. L. Stefanizzi, and R. Vergallo, "An RFID-based tracing and tracking system for the fresh vegetables supply chain," *International Journal of Antennas and Propagation*, vol. 2013, Article ID 531364, 2013. DOI: 10.1155/2013/531364, (ISSN: 16875869), (SCOPUS: 2-s2.0-84880872570), (ISI: 000321833200001)
- [9] L. Mainetti, F. Mele, L. Patrono, F. Simone, M. L. Stefanizzi, and R. Vergallo, "The impact of RF technologies and EPC standard on the fresh vegetables supply chain," *International Journal of RF Technologies: Research and Applications*, vol. 5, no. 1-2, pp. 1-40, 2013. DOI: 10.3233/RFT-130050, (ISSN: 17545730), (SCOPUS: 2-s2.0-84885962156)
- [10] L. Catarinucci, S. Guglielmi, L. Mainetti, V. Mighali, L. Patrono, M. L. Stefanizzi, and L. Tarricone, "An energy-efficient MAC scheduler based on a switched-beam antenna for wireless sensor networks," *Journal of Communications Software and Systems*, vol. 9, no. 2, pp. 117-127, 2013. (ISSN: 18456421), (SCOPUS: 2-s2.0-84886237081)
- [11] D. Blasi, L. Mainetti, L. Patrono, and M. L. Stefanizzi, "Implementation and validation of a new protocol stack architecture for embedded systems," *Journal of Communications Software and Systems*, vol. 9, no. 3, pp. 157-169, 2013. (ISSN: 18456421), (SCOPUS: 2-s2.0-84886290330)
- [12] D. Alessandrelli, L. Mainetti, L. Patrono, G. Pellerano, M. Petracca, and M. L. Stefanizzi, "Performance evaluation of an energy-efficient MAC scheduler by using a test bed approach," *Journal of Communications Software and Systems*, vol. 9, no. 1, pp. 84-96, 2013. (ISSN: 18456421), (SCOPUS: 2-s2.0-84876375112)

#### ***Proceedings of International Conferences***

- [13] V. Mighali, L. Patrono, and M. L. Stefanizzi, Joel J. P. C. Rodrigues, Petar Solic, "A Smart Remote Elderly Monitoring System based on IoT Technologies", The Ninth International Conference on Ubiquitous and Future Networks (2017).
- [14] L. Mainetti, V. Mighali, L. Patrono, P. Rametta and M. L. Stefanizzi, "An IoT-aware System for Elderly Monitoring", 3<sup>o</sup> International Forum on Research and Technologies for Society and Industry. RTSI2017
- [15] Luigi Patrono, Piercosimo Rametta, Laura Stefanizzi, "SafeRally: An Innovative Remote Monitoring System for Emergencies in Rallying", SpliTech2017 - 2nd International Multidisciplinary Conference on Computer and Energy Science.
- [16] M. L. Stefanizzi, L. Mottola, L. Mainetti, L. Patrono, "COIN: System Architecture for Programmable Connected Devices", Proceedings - 12th Annual International Conference on Distributed Computing in Sensor Systems, DCOSS 2016, 8 August 2016, Article number 7536318, Pages 96-98, Scopus ID: 2-s2.0-84985960359
- [17] Mainetti L., Patrono L., Stefanizzi M. L., "An Internet of Sport Architecture Based on Emerging Enabling Technologies", International Multidisciplinary Conference on Computer and Energy Science, 29 August 2016, Article number 7555928, Scopus ID: 2-

s2.0-84988851314. Best Paper Award.

- [18] M. L. Stefanizzi, L. Mottola, L. Mainetti, L. Patrono, "Poster: System Architecture for Programmable Connected Devices," Proceedings of the 2016 International Conference on Embedded Wireless Systems and Networks (EWSN 2016), Feb. 2016, pp. 251-252.
- [19] L. Mainetti, L. Patrono, M. L. Stefanizzi, R. Vergallo, "A Smart Parking System Based on IoT Protocols and Emerging Enabling Technologies," in 2015 IEEE World Forum on Internet of Things (WF-IoT), Milan (Italy), 14-16 December 2015, pp. 1-6.
- [20] P. Solic, I. Maresavoc, M. L. Stefanizzi, L. Patrono, L. Mainetti, "RFID-based Efficient Method for Parking Slot Car Detection," in 23rd International Conference on Software Telecommunications and Computer Networks, SoftCOM 2015, Split-Bol (Croatia), 2015, pp. 1-5.
- [21] Fachechi, L. Mainetti, L. Palano, L. Patrono, M. L. Stefanizzi, R. Vergallo, P. Chu, R. Gadh, "A New Vehicle-to-Grid System for Battery Charging exploiting IoT protocols", in IEEE International Conference on Industrial Technology, IEEE ICIT 2015, Seville (Spain), March 17-19, 2015, pp. 2154-2159. (SCOPUS: 2-s2.0-84937710594)
- [22] L. Catarinucci, D. De Donno, L. Mainetti, L. Palano, L. Patrono, M. L. Stefanizzi, and L. Tarricone, "Integration of UHF RFID and WSN technologies in healthcare systems", in 2014 IEEE RFID Technology and Applications Conference, RFID-TA 2014, Tampere, (Finland), 2014, pp. 289-294. DOI: 10.1109/RFID-TA.2014.6934245, (ISBN: 9781479946808) (SCOPUS: 2-s2.0-84912096603)
- [23] L. Mainetti, L. Palano, L. Patrono, M. L. Stefanizzi, R. Vergallo, "Integration of RFID and WSN Technologies in a Smart Parking System", in 22nd International Conference on Software Telecommunications and Computer Networks, SoftCOM 2014, Split (Croatia), 2014, pp. 104-110. DOI: 10.1109/SOFTCOM.2014.7039099, (ISBN: 9789532900514), (SCOPUS: 2-s2.0-84933530826)
- [24] L. Mainetti, L. Patrono, M. L. Stefanizzi, "Security in a Smart Lighting System: a Survey", in 22nd International Conference on Software Telecommunications and Computer Networks, SoftCOM 2014, Split (Croatia), 2014, (ISBN: 9789532900514)
- [25] De Rubertis, L. Mainetti, V. Mighali, L. Patrono, I. Sergi, M. L. Stefanizzi, and S. Pascali, "Performance evaluation of end-to-end security protocols in an Internet of Things," in 21st International Conference on Software, Telecommunications and Computer Networks, SoftCOM 2013, Split-Primosten (Croatia), 2013. DOI: 10.1109/SoftCOM.2013.6671893, (ISBN: 9789532900439), (SCOPUS: 2-s2.0-84893392836), (ISI: 000335559300019)
- [26] D. Alessandrelli, L. Mainetti, L. Patrono, G. Pellerano, M. Petracca, and M. L. Stefanizzi, "Implementation and validation of an energy-efficient MAC scheduler for WSNs by a test bed approach," in 20th International Conference on Software, Telecommunications and Computer Networks, SoftCOM 2012, Split (Croatia), 2012. (ISBN: 9789532900347, Print ISBN: 9781467327107), (SCOPUS: 2-s2.0-84870576973)
- [27] L. Catarinucci, R. Colella, M. De Blasi, L. Patrono, M.L. Stefanizzi, L. Tarricone, "Effectiveness of Far Field UHF RFID Tags for Item-Level Tracing in the Pharmaceutical Supply Chain," in Third International EURASIP Workshop on RFID Technology, EURASIP-RFID 2010, La Manga del Mar Menor (Spain), 2010, pp. 22-25. (ISBN: 9788496997479)
- [28] M. De Blasi, V. Mighali, L. Patrono, M. L. Stefanizzi, "Performance Evaluation of UHF RFID tags in the Pharmaceutical Supply Chain," in 20th Tyrrhenian Workshop on Digital Communications in The Internet of Things, Pula (Italy), 2010, pp. 283-292. DOI:



10.1007/978-1-4419-1674-7\_27, (ISBN: 9781441916730), (ISI: 000281143600027)

- [29] G. Ciccarese, M. De Blasi, P. Marra, V. Mighali, C. Palazzo, L. Patrono, and M. L. Stefanizzi, "Vertical handover algorithm for heterogeneous wireless networks," in NCM 2009 - 5th International Joint Conference on Int. Conf. on Networked Computing, Int. Conf. on Advanced Information Management and Service, and Int. Conf. on Digital Content, Multimedia Technology and its Applications, Seoul, 2009, pp. 1948-1954. DOI: 10.1109/NCM.2009.173, (ISBN: 9780769537696), (SCOPUS: 2-s2.0-73549088066)

***National Journals/Conferences***

- [30] Mainetti L., Patrono L., Stefanizzi M. L., "A Novel IoT-aware Smart Parking System", CINI Annual Workshop on ICT for Smart Cities and Communities (I-CiTies 2015).
- [31] F. Bini, M. De Blasi, V. Mighali, L. Patrono, M.L. Stefanizzi, "Item-level tracing in the pharmaceutical supply chain through UHF RFID technology," in *PhamaChem*, vol. September 2009, pp. 21-25. (ISSN: 17204003)

*In compliance with the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize the recipient of this document to use and process my personal details for the purpose of recruiting and selecting staff and I confirm to be informed of my rights in accordance to art. 7 of the above mentioned decree.*

*Autorizzo il trattamento dei dati personali ai sensi del d.lgs 196/03 e sue successive modifiche.*

Lecce, 05/07/2018

Maria Laura Stefanizzi

