

Roberto Valentini, PhD

CONTACT INFORMATION	Via B. Marinucci, 2 67100, L'Aquila, Italy	<i>mobile: +39 347 3633447</i> roberto.valentini@univaq.it
PERSONAL INFORMATION	Born on June 29, 1985 Italian citizenship	
MAIN RESEARCH INTERESTS	Energy-efficient communication paradigms for the Internet of Things (IoT). Design of energy-efficient wireless protocols for the IoT. Battery-powered communications. Battery-less and backscattering communications. Radio-frequency energy harvesting and Wireless Power Transfer (WPT). Radio-frequency Identification (RFID) systems.	
CURRENT POSITION	Assistant Professor (RTD-A) University of L'Aquila, Italy	<i>Oct 2022 – ongoing</i>
PREVIOUS POSITIONS	Post-doc Researcher University of L'Aquila, Italy	<i>Mar 2018 – Sep 2022</i>
ACADEMIC TITLES	Ph.D. Degree in Information and Communication Technology University of L'Aquila, Italy	<i>May 2018</i>
	<ul style="list-style-type: none">• <i>Thesis:</i> Modeling and Design of Wireless Protocols Towards Energy Neutral IoT• International Doctorate certificate	
	Master of Science in Telecommunication Engineering University of L'Aquila, Italy	<i>Oct 2014</i>
	<ul style="list-style-type: none">• <i>Thesis:</i> Performance Analysis of the IEEE 802.15.3c Medium Access Control Layer for Millimeter Wave WPANs• <i>Final grade:</i> 110/110 cum laude	
	Bachelor of Science in Telecommunication Engineering University of L'Aquila, Italy	<i>May 2009</i>
	<ul style="list-style-type: none">• <i>Thesis:</i> Non-Destructive Measurement of RF Permittivity With an Open-ended Coaxial Line• <i>Final grade:</i> 110/110 cum laude	
ACADEMIC EXPERIENCE	Member of Editorial Boards	<i>2019 – 2020</i>
	<ul style="list-style-type: none">• Guest editor of the special issue “Modeling and Control of Smart Energy Systems”. MDPI Eenergies (ISSN 1996-1073)	
	Peer Reviewer	<i>2015 – ongoing</i>
	<ul style="list-style-type: none">• <i>International magazines:</i> IEEE Trans. on Communications, IEEE Trans. on Wireless Communications, IEEE Trans. on Cognitive Communications and Networking, IEEE IoT Journal, ACM Trans. on Modeling and Computer Simulation, MDPI Sensors, MDPI Energies, MDPI Applied Sciences• <i>International conferences:</i> IEEE GLOBECOM, IEEE ICC, IEEE PIMRC, IEEE WCNC, IEEE SMARTGRIDCOMM, IEEE ISWCS	
	Teaching University of L'Aquila, Italy	<i>2022 – ongoing</i>

- *Master's level course*: Wireless Communications, Dept. of Information Engineering, Computer Science and Mathematics

Lecturer 2019 – 2020
University of L'Aquila, Italy

- *Bachelor course*: Signal Processing and Analysis, Dept. of Industrial Engineering

Teaching Assistant 2015 – 2022
University of L'Aquila, Italy

- *Bachelor course*: Signal Processing and Analysis, Dept. of Information Engineering, Computer Science and Mathematics
- *Master's level course*: Wireless Communications, Dept. of Information Engineering, Computer Science and Mathematics

Visiting Ph.D. Student 2015, 2016
University of California, Irvine

- *Research project*: Battery aging control solutions for energy harvesting embedded systems and wireless networks
- *Duration*: 11 months

Summer Internship Jun 2014
University of California, Irvine

- *Research project*: Modeling Medium Access Strategies for mmWave WPAN
- *Duration*: 3 months

ERASMUS Placement Program 2013
KTH Royal Institute of Technology

- *Research project*: Addressing Blockage and Deafness in mmWave WPAN
- *Duration*: 6 months

HONORS AND AWARDS Jan 2020
Best Presenter Award in the IEEE Annual Computing and Communication Workshop and Conference (CCWC)

PUBLICATIONS 17 peer-reviewed publications (8 international journals, 10 international conference papers). Google scholar h-index 6, i10-index 3, 80 citations.

LANGUAGES Italian (mother tongue), English (fluent)

PUBLICATIONS LIST **Journal Articles**

[J1] R. Valentini, M. Levorato and F. Santucci, "Aging Aware Random Channel Access for Battery-Powered Wireless Networks," in *IEEE Wireless Communications Letters*, vol. 5, no. 2, pp. 176–179, April 2016.

[J2] R. Alesii, P. Di Marco, F. Santucci, P. Savazzi, R. Valentini, and A. Vizziello. "Backscattering UWB/UHF hybrid solutions for multi-reader multi-tag passive RFID systems," in *EURASIP Journal on Embedded Systems*, 2016(1):10, May 2016.

[J3] R. Valentini, M. Levorato and F. Santucci, "Optimal Aging-Aware Channel Access and Power Allocation for Battery-Powered Devices With Radio Frequency Energy Harvesting," in *IEEE Transactions on Communications*, vol. 66, no. 11, pp. 5773–5787, Nov. 2018.

[J4] N. Ahmed, M. Levorato, R. Valentini, and G.P. Li. Data driven optimization of energy management in residential buildings with energy harvesting and storage. *Energies*, 13(9), 2020.

[J5] R. Valentini, P. D. Marco, R. Alesii and F. Santucci, “Cross-Layer Analysis of Multi-Static RFID Systems Exploiting Capture Diversity,” in *IEEE Transactions on Communications*, vol. 69, no. 10, pp. 6620–6632, Oct. 2021.

[J6] R. Valentini, P. Di Marco, and F. Santucci. “Exploiting capture diversity for performance enhancement of ALOHA-based multi-static backscattering systems in the 6g perspective,” in *Sensors*, 21(15), 2021.

[J7] R. Valentini, P. Di Marco and F. Santucci, ”A NOMA Scheme for IoT Enabled by Selective Powering of Passive Backscattering Nodes,” in *IEEE Communications Letters*, vol. 26, no. 9, pp. 2195-2199, Sept. 2022.

[J8] P. Di Marco, R. Valentini, F. Santicci, G. Pettanice and G. Antionini, “Boosting NOMA systems through smart metasurfaces,” in *Frontiers in Communications and Network*, vol. 3, 2022.

Conference Proceedings

[C1] R. Valentini, M. Levorato and C. Fischione, “Performance analysis of IEEE 802.15.3c-Based mmW wireless networks,” 2015 49th Annual Conference on Information Sciences and Systems (CISS), 2015, pp. 1–6.

[C2] N. Dang, R. Valentini, E. Bozorgzadeh, M. Levorato and N. Venkatasubramanian, “A unified stochastic model for energy management in solar-powered embedded systems,” 2015 IEEE/ACM International Conference on Computer-Aided Design (ICCAD), 2015, pp. 621–626.

[C3] R. Valentini, N. Dang, M. Levorato and E. Bozorgzadeh, “Modeling and control battery aging in energy harvesting systems” 2015 IEEE International Conference on Smart Grid Communications (SmartGridComm), 2015, pp. 515–20.

[C4] R. Alesii, P. D. Marco, F. Santucci, P. Savazzi, R. Valentini and A. Vizziello, “Multi-reader multi-tag architecture for UWB/UHF radio frequency identification systems,” 2015 International EURASIP Workshop on RFID Technology (EURFID), 2015, pp. 28–35.

[C5] R. Valentini and M. Levorato, “Optimal aging-aware channel access control for wireless networks with energy harvesting,” 2016 IEEE International Symposium on Information Theory (ISIT), 2016, pp. 2754–2758.

[C6] R. Valentini, R. Alesii, M. Levorato and F. Santucci, “Cross-Layer Analysis of RFID Systems with Correlated Shadowing and Random Radiation Efficiency,” 2019 IEEE International Conference on Communications (ICC), 2019, pp. 1–7.

[C7] R. Valentini, P. D. Marco, R. Alesii and F. Santucci, ”Exploiting Capture Diversity in Distributed Passive RFID Systems,” 2020 10th Annual Computing and Communication Workshop and Conference (CCWC), 2020, pp. 0996–1000.

[C8] R. Valentini, P. D. Marco, R. Alesii and F. Santucci, ”Cross-Layer Analysis of Dis-

tributed Passive RFID Systems Over Faded Backscattering Links,” 2020 IEEE Wireless Communications and Networking Conference (WCNC), 2020, pp. 1–6.

[C9] A. Rehman, P. D. Marco, R. Valentini and F. Santucci, “Analytical Modeling of Multiple Access Interference in C-V2X Sidelink Communications,” 2022 IEEE International Mediterranean Conference on Communications and Networking (MeditCom)