



# Virginia Pilloni

[Redacted contact information]  
[Redacted contact information]  
[Redacted contact information] ✉ [virginia.pilloni@unica.it](mailto:virginia.pilloni@unica.it)  
[Redacted contact information] 🌐 [goo.gl/VHPHmh](https://goo.gl/VHPHmh) • [in virginiapilloni](https://www.linkedin.com/in/virginiapilloni)

## Esperienza professionale

- 04/2020–Oggi **Assegnista di Ricerca, DIEE (Dipartimento di Ingegneria Elettrica ed Elettronica), Università di Cagliari, Cagliari.**  
Attività di ricerca sulla tematica *Sperimentazione di algoritmi per l'allocazione delle risorse nell'IoT.*
- 09/2019 **Esperta valutatrice per proposte Europee H2020, Commissione Europea.**
- 2018–Oggi **Membro Attivo di Comitati, IEEE Communications Society.**  
Membro attivo di: Young Professionals (YP) Standing Committee, Technical Committee on Network Operation and Management (CNOM), IEEE Wireless Communications Technical Committee (WTC), Internet of Things, Ad Hoc and Sensor Networks (AH-IOT) Technical Committee, Communications Systems Integration and Modeling (CSIM) Technical Committee. Award Chair per IEEE ComSoc Best YP Award 2021.
- 11/2015–04/2020 **Ricercatrice T.D. di tipo A, DIEE (Dipartimento di Ingegneria Elettrica ed Elettronica), Università di Cagliari, Cagliari.**  
Attività di ricerca nell'ambito dell'Ingegneria delle Telecomunicazioni, incentrata principalmente sull'Internet degli Oggetti, con particolare attenzione ad:i) assegnazione ottimale dei task agli oggetti; ii) schedulazione efficiente dei dispositivi di un edificio con attenzione al comfort degli utenti; iii) configurazione adattiva e context-aware dei dispositivi della rete.
- 05/2013–09/2020 **Cofondatrice, GreenShare S.r.l., Cagliari.**  
Cofondatrice della spin off accademica GreenShare S.r.l., la quale si occupa principalmente di offrire servizi legati all'infomobilità, al mobile payment e alle applicazioni mobile. Premi vinti: Sharitaly Start Up Awards 2015 e Start Cup Sardegna 2012 (col progetto CLacsoon). Servizi di maggior successo: SmarTicket, TeseoApp, Clacsoon.
- 08/2013–08/2015 **Assegnista di Ricerca, DIEE (Dipartimento di Ingegneria Elettrica ed Elettronica), Università di Cagliari, Cagliari.**  
Attività di ricerca sulla tematica *Approcci distribuiti per la configurazione adattiva di reti di sensori e attuatori.*

03/2010–Oggi **Collaborazione**, *DIEE (Dipartimento di Ingegneria Elettrica ed Elettronica), Università di Cagliari, Cagliari.*

Pubblicazione di 19 articoli su rivista, 27 articoli su atti di conferenza internazionale e 2 capitoli di libro con 617 citazioni e un h-index pari a 13 (fonte Scopus).

Responsabile scientifico del progetto di R&S LEAPH, finanziato da RAS-POR FESR. Partecipazione a diversi progetti di R&S all'interno del Multimedia Communication Laboratory (MCLab), fra i quali: INSIEME, finanziato dal MISE; QoE-Net, finanziato da UE-H2020-MSCA-ITN; Cagliari PORT 2020, finanziato dal MIUR; DEMANES, finanziato da UE-FP7.

---

## Istruzione e formazione

03/2010–05/2013 **Dottorato di Ricerca in Ingegneria Elettronica e Informatica**, *Scuola di Dottorato in Ingegneria dell'Informazione, Università di Cagliari, Cagliari, Valutazione: eccellente. Attribuita la menzione di Doctor Europaeus.*

Titolo della tesi: Dynamic Deployment of Applications in Wireless Sensor Networks.

11/2011–04/2012 **Studente in Visita**, *Centre for Communication Systems Research (CCSR), University of Surrey, Guildford (UK).*

02/2008–12/2009 **Laurea Specialistica in Ingegneria delle Telecomunicazioni**, *Università di Cagliari, Cagliari, 110/110 e lode.*

Tesi dal titolo: Convergenza dell'Accesso Mobile-Fisso Mediante Femtocella su Frequenze Libere da Licenze

09/2004–02/2008 **Laurea Triennale in Ingegneria Elettronica**, *Università di Cagliari, Cagliari, 110/110.*

---

## Riconoscimenti

- Abilitazione Scientifica Nazionale (ASN) conseguita in conformità con la Legge 240/10, art. 16, comma 1, con validità dal 19/11/2020 al 19/11/2029 per il settore scientifico disciplinare ING-INF/03 (Telecomunicazioni)
- Premio per il Best Paper *IoT-D2D Task Allocation: an Award-Driven Game Theory Approach* in occasione della International Conference on Telecommunications (ICT) 2016
- Premio per il Best Paper Runner Up *Resource Allocation Using Virtual Objects in the Internet of Things: a QoI Oriented Consensus Algorithm* in occasione di Innovation in Cloud, Internet and Networks (ICIN) 2016

---

## Attività didattiche

A.A. 2018–2019 **Corso di Smart Building (20 ore, 2.5 CFU)**, *Scuola di Dottorato in Ingegneria dell'Informazione, Università di Cagliari.*

A.A. 2019–2020 **Corso di Smart Housing (40 ore, 4 CFU)**, *Laurea Magistrale in Ingegneria delle Tecnologie per Internet, Università di Cagliari.*

A.A. 2017–2018 **Corso di Smart Housing (60 ore, 6 CFU)**, *Laurea Magistrale in Ingegneria delle Telecomunicazioni, Università di Cagliari.*

A.A. 2015–2016 **Corso di Tecnologie per le Reti Multiservizio (60 ore, 6 CFU)**, *Laurea Magistrale in Ingegneria delle Telecomunicazioni, Università di Cagliari.*

---

## Conferenze ed Eventi

- Membro del comitato organizzatore per IEEE IoT Vertical and Topical Summit for Tourism 2021
- Track Chair per la track Positioning, Navigation and Sensing in occasione di IEEE Vehicular Technology Conference Fall 2021 (VTC2021-Fall)
- Session Chair per la sessione Young Professionals – Early Career Faculty Applications: Best Practices in occasione di 2021 IEEE International Conference on Communications (ICC 2021)
- Workshop Chair per il Workshop on Mobile Edge Computing and Data Analytics for IoT (MECDA-IOT 2021), in concomitanza con IEEE World Forum on Internet of Things (WF-IoT) 2021
- Invited Speaker in occasione della Winter School Emerging Technologies for 5G and IoT 2021
- Track Chair per 2nd International Conference on Industrial Electronics for Sustainable Energy Systems (IESES) 2020
- Keynote Speaker in occasione di International Conference on Applied Computing (AC) 2019
- Panelist per il panel conclusivo della Vertical Session *Smart Cities* in occasione di IEEE World Forum on Internet of Things (WF-IoT) 2019
- Invited Speaker per la Topical Session *Sensors and Sensor Networks* e per la Vertical Session *Smart Cities* in occasione di IEEE World Forum on Internet of Things (WF-IoT) 2019
- Workshop Chair per il Workshop on Smart Building and Internet of Things (SBloT) all'interno di IEEE International Conference on Computing, Communication & Security (ICCCS) 2019
- Local Chair per International Conference on Quality of Multimedia Experience (QoMEX) 2018
- Session Chair per la sessione Selected Areas in Communications (SAC) - Internet of Things II in occasione di IEEE GLOBECOM 2015
- TPC per: IEEE SECON 2021; IEEE ICC 2017–2020; IEEE GLOBECOM 2017–2020; IEEE WF-5G 2018–2020; IoT-VTST 2020; SAM IoT 2020; IoT-ASAP 2017–2019; IEEE PIMRC 2018; IEEE CCNC 2018–2019; IEEE BMSB 2017; QoMEX 2017; IEEE ISCC 2017
- Relatrice in occasione di: IEEE 2nd International Conference on Industrial Electronics for Sustainable Energy Systems (IESES) 2020; IEEE World Forum on Internet of Things (WF-IoT) 2016 e 2019; International Conference on Quality of Multimedia Experience (QoMEX) 2018; IEEE Global IoT Summit (GloTS) 2017; Innovations in Clouds, Internet and Networks (ICIN) 2016; IEEE Global Communication Conference, Exhibitions & Industry Forum (GLOBECOM) 2015; IEEE International Conference on Communications (ICC) 2015 e 2013; 6° International ICST Conference on Mobile Multimedia (MOBIMEDIA) 2010

---

## Attività di editing

- Editor per le riviste Elsevier Computer Networks e Frontiers in Communications and Networks
- Guest editor per la Special Issue “IoT and Sensor Networks in Smart Buildings and Homes” della rivista MDPI Energies (submission deadline: TBD)
- Topic editor per il Research Topic “Intelligent Resource Management in Edge and Fog Computing” della rivista Frontiers in Communications and Networks (submission deadline: 30 Giugno 2021)
- Guest editor per la Special Issue “IoT and Sensor Networks in Industry and Society” della rivista MDPI Energies (chiusa il 20 Agosto 2020). Per questa Special Issue è stato pubblicato un numero di articoli tale da essere considerata valevole di ristampa sotto forma di libro, il quale attualmente si trova in fase di stampa.

---

## Attività di revisione articoli

- Elsevier: Ad Hoc Networks; Applied Energy; Computer Networks; Future Generation Computer Systems; Pervasive and Mobile Computing; Sustainable Computing, Informatics and Systems
- IEEE: Access; Communication Letters; Communications Magazine; Internet of Things Journal; Transactions on Mobile Computing; Transactions on Industrial Electronics; Transactions on Smart Grid; Transactions on Sustainable Energy; Transactions on Wireless Communications
- MDPI: Applied Sciences; Energies; Future Internet; Journal of Sensor and Actuator Networks; Sensors; Sustainability
- Inderscience: International Journal of Ad Hoc and Ubiquitous Computing; International Journal of Metadata, Semantics and Ontologies
- Wiley: Transactions on Emerging Telecommunications Technologies; Wireless Communications and Mobile Computing

---

## Pubblicazioni

### Capitoli di Libro

- [L1] Giovanni Merlino and Virginia Pilloni. “Resources virtualization and task offloading towards the Edge in the IoT”. In: *CNIT Technical Report-05 – Internet of Things: Technologies, Challenges and Impact*. TexMat, 2020, pp. 123–140.
- [L2] Gianluca Fadda, Mauro Fadda, Emilio Ghiani, and Virginia Pilloni. “Communications and internet of things for microgrids, smart buildings, and homes”. In: *Distributed Energy Resources in Microgrids*. Elsevier, 2019, pp. 243–273.

### Riviste

- [R1] Claudio Marche, Luigi Atzori, Virginia Pilloni, and Michele Nitti. “How to exploit the Social Internet of Things: Query Generation Model and Device Profiles’ Dataset”. In: *Computer Networks* (2020), p. 107248.

- [R2] Michele Nitti, Francesca Pinna, Lucia Pintor, Virginia Pilloni, and Benedetto Barabino. "iABACUS: A Wi-Fi-Based Automatic Bus Passenger Counting System". In: *Energies* 13.6 (2020), p. 1446.
- [R3] Roberto Girau, Raimondo Cossu, Massimo Farina, Virginia Pilloni, and Luigi Atzori. "Virtual User in the IoT: Definition, Technologies and Experiments". In: *Sensors* 19.20 (2019), p. 4489.
- [R4] Talha Faizur Rahman, Virginia Pilloni, and Luigi Atzori. "Application Task Allocation in Cognitive IoT: a Reward-Driven Game Theoretical Approach". In: *IEEE Transactions on Wireless Communications* (2019).
- [R5] Francesca Marcello, Virginia Pilloni, and Daniele Giusto. "Sensor-Based Early Activity Recognition Inside Buildings to Support Energy and Comfort Management Systems". In: *Energies* 12.13 (2019), p. 2631.
- [R6] Luigi Atzori, Roberto Girau, Virginia Pilloni, and Marco Uras. "Assignment of sensing tasks to IoT devices: Exploitation of a Social Network of Objects". In: *IEEE Internet of Things Journal* (2018).
- [R7] Emilio Ghiani, Alessandro Serpi, Virginia Pilloni, Giuliana Sias, Marco Simone, Gianluca Marcialis, Giuliano Armano, and Paolo Pegoraro. "A Multidisciplinary Approach for the Development of Smart Distribution Networks". In: *Energies* 11.10 (2018), p. 2530.
- [R8] Virginia Pilloni. "How Data Will Transform Industrial Processes: Crowdsensing, Crowdsourcing and Big Data as Pillars of Industry 4.0". In: *Future Internet* 10.3 (2018), p. 24.
- [R9] Virginia Pilloni, Alessandro Floris, Alessio Meloni, and Luigi Atzori. "Smart home energy management including renewable sources: A QoE-driven approach". In: *IEEE Transactions on Smart Grid* 9.3 (2018), pp. 2006–2018.
- [R10] Virginia Pilloni, Emad Abd-Elrahman, Makhlof Hadji, Luigi Atzori, and Hossam Afifi. "IoT\_ProSe: Exploiting 3GPP services for task allocation in the Internet of Things". In: *Ad Hoc Networks* 66 (2017), pp. 26–39.
- [R11] Virginia Pilloni and Luigi Atzori. "Consensus-based resource allocation among objects in the internet of things". In: *Annals of Telecommunications* (2017), pp. 1–15.
- [R12] Michele Nitti, Virginia Pilloni, Daniele Giusto, and Vlad Popescu. "IoT Architecture for a Sustainable Tourism Application in a Smart City Environment". In: *Mobile Information Systems 2017* (2017).
- [R13] Virginia Pilloni, Luigi Atzori, and Matteo Mallus. "Dynamic Involvement of Real World Objects in the IoT: A Consensus-Based Cooperation Approach". In: *Sensors* 17.3 (2017), p. 484.

- [R14] Matteo Mallus, Giuseppe Colistra, Luigi Atzori, Maurizio Murrone, and Virginia Pilloni. "Dynamic Carpooling in Urban Areas: Design and Experimentation with a Multi-Objective Route Matching Algorithm". In: *Sustainability* 9.2 (2017), p. 254.
- [R15] Virginia Pilloni, Mauro Franceschelli, Luigi Atzori, and Alessandro Giua. "Deployment of Applications in Wireless Sensor Networks: A Gossip-Based Lifetime Maximization Approach". In: *IEEE Transactions on Control Systems Technology* 24.5 (2016), pp. 1828–1836.
- [R16] Michele Nitti, Virginia Pilloni, Giuseppe Colistra, and Luigi Atzori. "The Virtual Object as a Major Element of the Internet of Things: a Survey". In: *IEEE Communications Surveys & Tutorials* 18.2 (2015), pp. 1228–1240.
- [R17] Giuseppe Colistra, Virginia Pilloni, and Luigi Atzori. "The problem of task allocation in the internet of things and the consensus-based approach". In: *Computer Networks* 73 (2014), pp. 98–111.
- [R18] Virginia Pilloni, Pirabakaran Navaratnam, Serdar Vural, Luigi Atzori, and Rahim Tafazolli. "TAN: a distributed algorithm for dynamic task assignment in WSNs". In: *IEEE Sensors Journal* 14.4 (2014), pp. 1266–1279.
- [R19] Virginia Pilloni and Luigi Atzori. "Deployment of distributed applications in Wireless Sensor Networks". In: *Sensors* 11.8 (2011), pp. 7395–7419.

### Conferenze

- [C1] F. Marcello and V. Pilloni. "Smart building energy and comfort management based on sensor activity recognition and prediction". In: *CEUR Workshop Proceedings*. Vol. 2739. 2020, pp. 31–37.
- [C2] F Casu, S Korjani, V Pilloni, A Serpi, A Damiano, and D Giusto. "Designing Nearly Zero Energy Buildings: a Recommendation Tool for Optimal Sizing of Renewable Energy Source Systems". In: *IEEE 2nd International Conference on Industrial Electronics for Sustainable Energy Systems (IESES 2020)*. 2020, pp. 305–310.
- [C3] Francesca Marcello and Virginia Pilloni. "Sensor-Based Activity Recognition Inside Smart Building Energy and Comfort Management Systems". In: *2019 IEEE 5th World Forum on Internet of Things (WF-IoT)*. IEEE. 2019, pp. 639–643.
- [C4] Talha Faizur Rahman, Virginia Pilloni, and Luigi Atzori. "Task allocation in clusters of cognitive nodes: A remuneration-aided approach". In: *ICC 2019-2019 IEEE International Conference on Communications (ICC)*. IEEE. 2019, pp. 1–6.
- [C5] Alessandro Floris, Fabio Casu, Virginia Pilloni, and Luigi Atzori. "A Quality of Experience Prediction Model for Smart Home Energy Management Systems". In: *2018 IEEE Globecom Workshops (GC Wkshps)*. IEEE. 2018, pp. 1–6.

- [C6] Michele Nitti, Virginia Pilloni, and Luigi Atzori. "EmIoT: Giving Emotional Intelligence to the Internet of Things". In: *2018 Tenth International Conference on Quality of Multimedia Experience (QoMEX)*. IEEE. 2018, pp. 1–3.
- [C7] Elisavet Grigoriou, Theocharis Saoulidis, Luigi Atzori, Virginia Pilloni, and Periklis Chatzimisios. "An Agent-Based QoE Monitoring Strategy for LTE Networks". In: *2018 IEEE International Conference on Communications (ICC)*. IEEE. 2018, pp. 1–6.
- [C8] Roberto Girau, Virginia Pilloni, and Luigi Atzori. "The virtual user: The holistic manager of our IoT applications". In: *Internet of Things (WF-IoT), 2018 IEEE 4th World Forum on*. IEEE. 2018, pp. 149–154.
- [C9] Elisavet Grigoriou, Luigi Atzori, and Virginia Pilloni. "A Novel Strategy for Quality of Experience Monitoring and Management". In: *GLOBECOM 2017-2017 IEEE Global Communications Conference*. IEEE. 2017, pp. 1–6.
- [C10] M Fadda, M Nitti, V Pilloni, L Atzori, D Giusto, V Popescu, and M Alexandru. "Distributed spectrum sensing for indoor broadcasting services using an IoT platform". In: *Broadband Multimedia Systems and Broadcasting (BMSB), 2017 IEEE International Symposium on*. IEEE. 2017, pp. 1–4.
- [C11] Claudio Marche, Michele Nitti, and Virginia Pilloni. "Energy efficiency in smart building: A comfort aware approach based on Social Internet of Things". In: *Global Internet of Things Summit (GloTS), 2017*. IEEE. 2017, pp. 1–6.
- [C12] Elisavet Grigoriou, Alcardo Alex Barakabitzte, Luigi Atzori, Lingfen Sun, and Virginia Pilloni. "An SDN-approach for QoE management of multimedia services using resource allocation". In: *Communications (ICC), 2017 IEEE International Conference on*. IEEE. 2017, pp. 1–7.
- [C13] Michele Nitti, Roberto Girau, Luigi Atzori, and Virginia Pilloni. "Trustworthiness management in the IoT: The importance of the feedback". In: *Innovations in Clouds, Internet and Networks (ICIN), 2017 20th Conference on*. IEEE. 2017, pp. 325–327.
- [C14] Luigi Atzori, Roberto Girau, Salvatore Martis, Virginia Pilloni, and Marco Uras. "A SloT-aware approach to the resource management issue in mobile crowdsensing". In: *Innovations in Clouds, Internet and Networks (ICIN), 2017 20th Conference on*. IEEE. 2017, pp. 232–237.
- [C15] Matteo Mallus, Giuseppe Colistra, Luigi Atzori, Maurizio Murrone, and Virginia Pilloni. "A persuasive real-time carpooling service in a smart city: A case-study to measure the advantages in urban area". In: *Innovations in Clouds, Internet and Networks (ICIN), 2017 20th Conference on*. IEEE. 2017, pp. 300–307.

- [C16] Michele Nitti, Virginia Pilloni, and Daniele D Giusto. "Searching the social Internet of Things by exploiting object similarity". In: *Internet of Things (WF-IoT), 2016 IEEE 3rd World Forum on*. IEEE. 2016, pp. 371–376.
- [C17] Emad Abd-Elrahman, Hossam Afifi, Luigi Atzori, Makhoul Hadji, and Virginia Pilloni. "IoT-D2D task allocation: An award-driven game theory approach". In: *2016 23rd International Conference on Telecommunications (ICT)*. IEEE. 2016, pp. 1–6.
- [C18] Andrea Carta, Virginia Pilloni, and Luigi Atzori. "Resource Allocation Using Virtual Objects in the Internet of Things: a QoI Oriented Consensus Algorithm". In: *2016 Innovations in Clouds, Internet and Networks (ICIN)*.
- [C19] Alessandro Floris, Alessio Meloni, Virginia Pilloni, and Luigi Atzori. "A QoE-aware Approach for Smart Home Energy Management". In: *2015 IEEE Global Communications Conference (GLOBECOM)*. IEEE. 2015, pp. 1–6.
- [C20] Matteo Cabras, Virginia Pilloni, and Luigi Atzori. "A novel smart home energy management system: Cooperative neighbourhood and adaptive renewable energy usage". In: *2015 IEEE International Conference on Communications (ICC)*. IEEE. 2015, pp. 716–721.
- [C21] Roberto Cherchi, Giuseppe Colistra, Virginia Pilloni, and Luigi Atzori. "Energy consumption management in Smart Homes: An M-Bus communication system". In: *Telecommunications and Multimedia (TEMU), 2014 International Conference on*. IEEE. 2014, pp. 80–85.
- [C22] Giuseppe Colistra, Virginia Pilloni, and Luigi Atzori. "Task allocation in group of nodes in the IoT: A consensus approach". In: *2014 IEEE International Conference on Communications (ICC)*. IEEE. 2014, pp. 3848–3853.
- [C23] Giuseppe Colistra, Virginia Pilloni, and Luigi Atzori. "Objects that agree on task frequency in the IoT: A lifetime-oriented consensus based approach". In: *Internet of Things (WF-IoT), 2014 IEEE World Forum on*. IEEE. 2014, pp. 383–387.
- [C24] Virginia Pilloni, Pirabakaran Navaratnam, Serdar Vural, Luigi Atzori, and Rahim Tafazolli. "Cooperative task assignment for distributed deployment of applications in WSNs". In: *2013 IEEE International Conference on Communications (ICC)*. IEEE. 2013, pp. 2229–2234.
- [C25] Virginia Pilloni, Mauro Franceschelli, Luigi Atzori, and Alessandro Giua. "A decentralized lifetime maximization algorithm for distributed applications in wireless sensor networks". In: *2012 IEEE International Conference on Communications (ICC)*. IEEE. 2012, pp. 1372–1377.



- [C26] Virginia Pilloni and Luigi Atzori. "Energy-efficient task allocation for distributed applications in wireless sensor networks". In: *2011 IEEE GLOBECOM Workshops (GC Wkshps)*. IEEE. 2011, pp. 321–326.
- [C27] Virginia Pilloni and Luigi Atzori. "Fixed-Mobile Convergence: Using Unlicensed DECT Frequencies in UMTS Femtocell Services Deployment". In: *International Conference on Mobile Multimedia Communications*. Springer. 2010, pp. 193–205.