Giovanni Pettorru

CONTACT

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in giovannipettorru

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PROFESSIONAL EXPERIENCE

Tutor, teaching assistant | 2021–2023

University of Cagliari, Italy – Tutor for the course Telecommunication Networks for Bachelor's students in Electrical, Electronic, and Computer Engineering.

Freelance Worker | Jul 2021– Jan 2023

University of Cagliari, Italy – Support for the development of data acquisition algorithms on wireless networks and design of monitoring system for alerting in the presence of critical situations in urban environment

Tutor, teaching assistant | 2024–2025

University of cagliari, Italy – Tutor for the Network Security course for Master's students in Internet Engineering.

Tutor, teaching assistant | 2025–2026

University of Cagliari, Italy – Tutor for the course Cloud Networking for Bachelor's students in Electronic, Computer and Telecommunication Engineering.

Adjunct Professor | June 2025

University of Cagliari, Italy – Teaching activities related to the course "Didactics for Telecommunication Systems," within the Initial University Training Program for Secondary School Teachers (First and Second Level).

EDUCATION

Secondary School Diploma | 2011–2016

Technical Commercial Institute (ITC) G.P Ch.ironi, Nuoro, Italy

- Economics sector, Administration, Finance and Marketing – Specialisation in Business information systems

University of Cagliari | 2016–2020

Bachelor degree – Electrical, Electronic and Computer Engineering

- Final degree mark: 96/110
- Thesis title: Implementation of a Magnetometer Based Vehicle Detection System for Smart Parking Applications

University of Cagliari | 2020–2022

Master degree – Internet Engineering

- Final degree mark: 110/110 cum laude
- Thesis title: Secure and Low–Latency Communications Based on WebSocket over QUIC in Internet of Things Scenarios

University of Cagliari, Italy | 2022–Present

Doctor of Philosophy (Ph.D.) – Electronic and Computer Engineering

Instituto Politécnico de Viana do Castelo, Portugal | May 2024 – Sep 2024

Visiting Ph.D student

OTHER ACTIVITIES AND CERTIFICATES

Student Grant | Apr 2020– Sep 2020

University of Cagliari, Italy

- Educational Project 'M2M Comm– M2M Communication Standards in Smart Cities Environment

English B2 Level Certification | 2022

CLA – University of Cagliari, Italy

Training Course in European Project Design | 2023

Intellera Consulting S.p.a

- The course provides knowledge and skills on directly managed European funds 2021–2027, focusing on methodologies and techniques for writing, developing and managing a project proposal to be submitted in response to a European call for proposals.

AWARDS

Three-Minute-Thesis (3MT) Competition | Jun 2023

IEEE ComSoc

- Placed 3rd in the 1st Three-Minute Thesis (3MT) Competition by IEEE ComSoc at ICC 2023, where PhD students were challenged to present their research to a non-specialist audience in just three minutes.

Start Cup Sardegna | Oct 2024

University of Sassari, University of Cagliari and INNOIS

- Selected as one of the top 10 finalists in Start Cup Sardegna 2024, the competition recognizes the best innovative business ideas to develop in Sardinia.
- We achieved second prize at the University of Cagliari for our project AGROS, which focused on Location-Based Services applied to Smart Agriculture. As part of Spoke 7 of the e.INS (Ecosystem of Innovation for Next Generation Sardinia) project.

Four-Minute-Thesis (4MT) Competition | Dec 2024

IEEE ComSoc

- Among the 15 finalists in the Four-Minute Thesis (4MT) Competition by IEEE ComSoc at Globecom 2024, where PhD students were challenged to present their research to a non-specialist audience in just four minutes.

AgriFuture | Jan 2025 – Oct 2025

Startup Desk by Sardegna Ricerche

- Selected with the AGROS project among the top 10 high-tech innovative ideas aimed at addressing the needs and challenges of the agri-food sector.

CONFERENCE PROCEEDINGS

[C1] **Implementation of a Magnetometer based Vehicle Detection System for Smart Parking applications**; A. Floris, R. Girau, S. Porcu, G. Pettorru, L. Atzori; International Smart Cities Conference (ISC2), IEEE (2020)

[C2] **Implementation of a Multisensors Fire-Fighting Monitoring System for Forest Protection**; G. Pettorru, M. Bertolusso, M. Spanu, M. Sole, M. Anedda, D. Giusto; International Conference on Computational Science and Computational Intelligence (CSCI); IEEE (2022)

[C3] **A Machine Learning-based Approach for Vehicular Tracking in Low Power Wide Area Networks**; M. Bertolusso, M. Spanu, G. Pettorru, M. Anedda, M. Fadda, R. Girau, M. Farina, D. Giusto; International Symposium on Broadband Multimedia Systems and Broadcasting (BMSB) ; IEEE (2022)

[C4] **A passive Wi-Fi based monitoring system for urban flows detection**; M. Bertolusso, G. Pettorru, M. Spanu, M. Fadda, M. Sole, M. Anedda, D. Giusto.; International Conference on Industry 4.0, Artificial Intelligence, and Communications Technology (IAICT); IEEE (2022)

[C5] **Pedestrian and vehicular tracking based on Wi-Fi sniffing: a real-world case study**; M. Bertolusso, G. Pettorru, M. Spanu, M. Fadda, M. Sole, M. Farina, M. Anedda, D. D. Giusto; International Congress Future Telecommunications: Infrastructure and Sustainability (FITCE); IEEE (2022)

[C6] **An IoT-based electronic sniffing for forest fire detection**; G. Pettorru, M. Fadda, R. Girau, M. Anedda, D. Giusto; International Conference on Consumer Electronics (ICCE); IEEE (2023)

[C7] **A Hybrid WiFi/Bluetooth RSS Dataset with Application to Multilateration-Based Localization**; G. Pettorru, V. Pilloni, and M. Martalò; International Mediterranean Conference on Communications and Networking (MeditCom); IEEE (2023)

[C8] **Using Artificial Intelligence and IoT Solution for Forest Fire Prevention**; G. Pettorru, M. Fadda, R. Girau, M. Sole, M. Anedda, D. Giusto; International Conference on Computing, Networking and Communication (ICNC) ; IEEE (2023)

[C9] **QUIC and WebSocket for Secure and Low-Latency IoT Communications: an Experimental Analysis**; G. Pettorru, and M. Martalò; International Conference on Communications (ICC); IEEE (2023)

[C10] **Obfuscating Sensor-Based Activity Recognition in eHealth Applications: Is Encryption Enough Secure?**; F. Marcello; G. Pettorru; M. Martalò; V. Pilloni; International Conference on Communications (ICC) ; IEEE (2024)

[C11] **Preserving Privacy in CSI-based Human Activity Recognition: a Data Obfuscation Case Study**; F. Marcello; G. Pettorru; M. Martalò; V. Pilloni; Global Communications Conference (GlobeCom) ; IEEE (2024)

[C12] **Assessing the Interplay between IoT Localization Accuracy and the Two-Ray Channel,** C. Huidobro, M.G. Gaitán, C. Oberli, G. Pettorru, M. Martalò, V. Pilloni; Wireless Communications and Networking Conference (WCNC), IEEE (2025)

[C13] **How Do Jamming Attacks Impact the Performance of RSS-Based Localization Techniques?,** G. Pettorru, G. Nurcis, M. Martalò, V. Pilloni; International Conference on Communications (ICC), IEEE (2025)

[C14] **Multilateration-Assisted Fingerprinting-Based Localization for Dynamic IoT Environments**, G. Pettorru, V. Pilloni, M. Martalò; International Mediterranean Conference on Communications and Networking (MeditCom), IEEE (2025)

[C15] **A Reliability Index for Position Estimation in Trustworthy Location-Based Services**, G. Pettorru, A. Coni, V. Pilloni, M. Martalò; International Mediterranean Conference on Communications and Networking (MeditCom), IEEE (2025)

PUBLICATIONS
JOURNAL ARTICLES

[R1] **A Cross-Layer Survey on Secure and Low-Latency Communications in Next-Generation IoT**; M. Martalò, G. Pettorru, and L. Atzori ; Transactions on Network and Service Management ; IEEE (2024)

[R2] **Trustworthy Localization in IoT Networks: A Survey of Localization Techniques, Threats, and Mitigation**; G. Pettorru, V. Pilloni, and M. Martalò ; Sensors ; MDPI (2024)

[R3] **Balancing Complexity and Performance in Convolutional Neural Network Models for QUIC Traffic Classification**; G. Pettorru, M. Flumini, and M. Martalò ; Sensors ; MDPI (2025)