



Giovanni Pettorru, Ph.D.

CONTACT

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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 | 2022–2026

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

- Thesis title: Energy-Efficient and Trustworthy Location-Based Services for Next-Generation IoT

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

Visiting Ph.D student

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

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).

Tutor, teaching assistant | 2024–2026

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.

Tutor, teaching assistant | 2025-2026

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

Freelance Worker | Nov 2025- Feb 2026

University of Cagliari, Italy – Support for the development of an Internet of Things-based platform for monitoring agricultural parameters.

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 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 University of Cagliari (Spoke 7 of the e.INS) for the project AGROS, which focused on Location-Based Services applied to Smart Agriculture.

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.

Start Cup Sardegna | Oct 2025

University of Sassari, University of Cagliari and INNOIS

- Selected as one of the top 10 finalists in Start Cup Sardegna 2025, the competition recognizes the best innovative business ideas to develop in Sardinia.
- Special mention “Climate Change” awarded to the LENS project for its ability to integrate innovation and technology in the timely detection of extreme natural events, enhancing risk management and mitigation.

Four-Minute-Thesis (4MT) Competition | Dec 2025 IEEE ComSoc

- Among the 15 finalists in the Four-Minute Thesis (4MT) Competition by IEEE ComSoc at Globecom 2025, where PhD students were challenged to present their research to a non-specialist audience in just four minutes.

SERICS Lab2Bay | 2026 Fondazione SERICS @ INNOVIT

- Selected for the acceleration program in San Francisco with the GreenShield project, addressing resource-aware IoT security.

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)

[C16] **Evaluation of Resource-Aware HTTP/3 Proxies for Smuggling Resilience in IoT Environments**, Pisu, L., Pettorru, G., Regano, R., Maiorca, D., Giacinto, G., Martalò, M.; Global Communications Conference (GlobeCom) ; IEEE (2025)

[C17] **FiSH: Feature-informed Similarity Hashing for Edge-based Traffic Fingerprinting**, Mancosu, A., Pettorru, G., Martalò, M.; International Conference on Communications (ICC), IEEE (2026)

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)

[R4] **A Persistent and Secure Publish-Subscriber Architecture for Low-Latency IoT Communications**; G. Pettorru and M. Martalò; Transactions on Network and Service Management (TNSM); IEEE (2025)