GIOVANNI PETTORRU

CURRICULUM VITAE

dal 1994 Consorzio Interuniversitario AlmaLaurea
Un ponte fra Università e mondo del lavoro e delle professioni

Date of birth / **22/01/1997** Age / **27**
Place of birth / **NUORO (NU)**
Nationality/ citizenship / **Italy**
Via della pace 5, 08022 DORGALI (NU)
Driving licence / **B**

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SOCIAL NETWORK

in

FOREIGN LANGUAGE SKILLS

europass

ENGLISH	GOOD	B2	B2	B2	B2	B2

DIGITAL COMPETENCES

DigComp
Information and data literacy Proficient user
Communication and collaboration Proficient user
Digital content creation Proficient user
Safety Proficient user
Problem solving Proficient user

EXPECTATIONS AND FEATURES OF THE DESIRED JOB

INTENTION TO CONTINUE STUDIES: **Yes** / Doctoral studies

ECONOMIC SECTOR: **1.** computer science, data processing and acquisition / **2.** communication and telecommunications / **3.** education, training, research and development

CAREER FIELD: **1.** Engineering and design / **2.** R&D and patents / **3.** Organization

PREFERRED DISTRICT TO WORK IN: **1. CAGLIARI**

AVAILABILITY FOR BUSINESS TRAVELS: **Yes, even frequently**

AVAILABILITY TO RELOCATE ABROAD: **Yes, but only in Europe**

WORK EXPERIENCES

NETWORK ENGINEER AND SOFTWARE DEVELOPER
UNIVERSITÀ DEGLI STUDI DI CAGLIARI
Computer science, data processing and acquisition
CAGLIARI (CA)
07/2021 - 01/2023

Main activities and responsibilities: Support development of data acquisition algorithms on wireless networks and design of monitoring system for alerting in the presence of critical situations in urban environment
Working as: employee collaborator | Company sector: Engineering and design

ACADEMIC STUDIES

PH.D.
2022 - 2025
ONGOING STUDIES
Università degli Studi di Cagliari

Università degli Studi di CAGLIARI
ELECTRONIC AND COMPUTER ENGINEERING
Expected graduation date: 2025

MASTER'S DEGREE
2020 - 2022
CERTIFIED TITLE
Università degli Studi di Cagliari

Università degli Studi di CAGLIARI
Facoltà di Ingegneria e Architettura
ENGINEERING OF INTERNET TECHNOLOGIES
LM-27 - 2nd level degree in Telecommunications engineering
Dissertation/thesis title: Secure and low-latency communications based on Websocket over QUIC in Internet of Things scenarios | Dissertation/thesis subject: INTERNET OF THINGS | Thesis supervisor: MARTALO' MARCO
Age at graduation: 25 | Official duration: 2 years
Final degree mark: **110/110 cum laude**
Graduation date: 30/09/2022

BACHELOR'S DEGREE
2016 - 2020
CERTIFIED TITLE
Università degli Studi di Cagliari

Università degli Studi di CAGLIARI
Facoltà di Ingegneria e Architettura
ELECTRICAL, ELECTRONIC AND COMPUTER ENGINEERING
specific field of the degree course: informatica
L-8 - 1st level degree in Information technology
Dissertation/thesis title: Implementation of a Magnetometer based Vehicle Detection System for Smart Parking applications | Dissertation/thesis subject: CLOUD COMPUTING E SMART CITIES | Thesis supervisor: FLORIS ALESSANDRO | Dissertation/thesis keywords: Smart City, Internet of Things, telecommunications, IoT, sensoring
Age at graduation: 23 | Official duration: 3 years
Final degree mark: **96/110**
Graduation date: 27/07/2020

TECHNICAL CERTIFICATE
NUORO
2016

Vocational School, Economics sector, Administration, Finance and Marketing specialisation, Business information systems focus
ITC/1-CHIRONI-NUORO , NUORO (NU)
School-leaving examination mark: **92/100**
Kind of secondary school diploma: Italian secondary school diploma
Kind of secondary school attended: Public school

OTHER POSTGRADUATE STUDIES

CERTIFICATO DI PARTECIPAZIONE
2023

Corso di formazione in progettazione europea
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.

STUDENT GRANT
2020

Educational Project 'M2M Comm- M2M Communication Standards in Smartcities Environment.'
Università degli Studi di CAGLIARI
The activities of the fellows, in accordance with the Training Project 'M2M Comm- Standards of M2M Communication in Smartcities Environment,' were divided over three modules, totaling 70 hours of training on:
- Architectures and Protocols for the Internet of Things (IoT);
- Protocols for Short-Range Communication;
- Systems for deployment and management of Smart Cities applications,
Finally, three months of mentorship with staff engaged in research and development activities.
Duration: 6 months

FOREIGN LANGUAGE SKILLS

English Certificato di conoscenza Inglese B2, Progetto CLA Cagliari - Università di Cagliari, 11 Feb 2022 , **Europass level B2**

INFORMATION TECHNOLOGY SKILLS

OFFICE AUTOMATION

Office Suite: (Advanced) | **Presentation Software:** (Advanced) | **Spreadsheets:** (Advanced) | **Word Processors:** (Advanced)

APPLICATION SOFTWARE

Data Visualization: MATLAB (Foundation)

COMPUTER PROGRAMMING

Markup languages: HTML (Intermediate) | **Programming languages:** Assembly (Foundation) , C (Advanced) , C++ (Foundation) , Go (Foundation) , Java (Foundation) , JavaScript (Foundation) , Python (Advanced) | **Web Programming:** PHP (Foundation)

SYSTEMS AND NETWORKS MANAGEMENT

Network architecture: (Intermediate) | **Operating systems:** (Intermediate)

DATA MANAGEMENT

DBMS: (Intermediate)

GRAPHICS AND MULTIMEDIA

(Foundation)

STUDIES AND EXPERIENCES ABROAD

PORTUGAL
2024

Other experience acknowledged by the course of study (Visiting Ph.D. Student)
Place: **Viana do Castelo (Portugal)** | Language: English | Duration: 6 (months)

PROFESSIONAL ACCOLADES AND AWARDS

COMPETITION
30/05/2023

Three-Minute-Thesis (3MT) Competition
IEEE ComSoc will organize the 1st Three Minute Thesis (3MT) Competition at the ICC 2023, which challenges PhD students to explain their research project to a non-specialist audience in just

three minutes.

Participation in 3MT supports competitors to: Communicate their ideas effectively; Describe their research findings to a non-specialist audience; Increase their profile among the research community; and Network with other PhD students.
Grading in list: 3
icc2023.ieee-icc.org/program/three-minute-thesis-3…

CONFERENCES AND SEMINARS

CONFERENCES
2022

BMSB 2022 , IEEE , Bilbao
Character: Author

PUBLICATIONS

JOURNAL ARTICLES
2024

Marco Martalò, Giovanni Pettorru, and Luigi Atzori, A Cross-Layer Survey on Secure and Low-Latency Communications in Next-Generation IoT
Review: Transactions on Network and Service Management
Publisher: IEEE
ieeexplore.ieee.org/abstract/document/10504601

JOURNAL ARTICLES
2024

Giovanni Pettorru, Virginia Pilloni, and Marco Martalò, Trustworthy Localization in IoT Networks: A Survey of Localization Techniques, Threats, and Mitigation
Review: Sensors
Publisher: MDPI
www.mdpi.com/1424-8220/24/7/2214

CONFERENCE PROCEEDINGS
2023

Giovanni Pettorru, and Marco Martalò, QUIC and WebSocket for Secure and Low-Latency IoT Communications: an Experimental Analysis
Collection: International Conference on Communications
Organization: IEEE
This work focuses on enhancing security and reducing latency in communications within various Internet of Things (IoT) scenarios, including applications in Industry 4.0. We evaluate WS-QUIC, a WebSocket over QUIC protocol, for intra-network communication between IoT devices and gateways.
ieeexplore.ieee.org/document/10279305

CONFERENCE PROCEEDINGS
2023

Giovanni Pettorru, Mauro Fadda, Roberto Girau, Mariella Sole, Matteo Anedda, Daniele Giusto, Using Artificial Intelligence and IoT Solution for Forest Fire Prevention
Collection: ICNC 2023
Organization: IEEE
This paper proposes a new monitoring system and the use of artificial intelligence (AI) for real-time fire detection. The system is based on intelligent Digital Mobile Radio (DMR) nodes and a Social Internet of Things (SIoT) platform on which AI algorithms have been implemented. The results obtained show the ability to detect the slightest change in observed environmental parameters, determining the direction and speed of fire propagation.
ieeexplore.ieee.org/document/10074289

CONFERENCE PROCEEDINGS
2023

G. Pettorru, V. Pilloni, and M. Martalò, A Hybrid WiFi/Bluetooth RSS Dataset with Application to Multilateration-Based Localization
Collection: MeditCom 2023
Organization: IEEE
ieeexplore.ieee.org/abstract/document/10266625

CONFERENCE PROCEEDINGS
2023

Giovanni Pettorru, Mauro Fadda, Roberto Girau, Matteo Anedda, Daniele Giusto, An IoT-based electronic sniffing for forest fire detection
Collection: ICCE 2023

Organization: IEEE
This paper proposes a new real-time fire monitoring and detection system based on Digital Mobile Radio (DMR) nodes and a Social Internet of Things (SIoT) platform on which artificial intelligence algorithms have been implemented. The results obtained show the ability to detect the slightest variation in the observed parameters, determining the direction and speed of fire propagation.
ieeexplore.ieee.org/document/10043411

CONFERENCE PROCEEDINGS
2022

M. Bertolusso, G. Pettorru, M. Spanu, M. Fadda, M. Sole, M. Farina, M. Anedda, D. D. Giusto, Pedestrian and vehicular tracking based on Wi-Fi sniffing: a real-world case study
Collection: FITCE 2022
Organization: IEEE
This paper presents an innovative vehicle monitoring system based on Wi-Fi sniffing devices and real-time data processing using ML techniques. Our solution involves the construction of a NN-based multiclass classifier that can classify the incoming Wi-Fi signal from many sources based on the received signal strength. The solution was carried out by training the NN to predict different output classes corresponding to different vehicular and several pedestrian speed ranges among 0-15 Km/h.
ieeexplore.ieee.org/document/9934777

CONFERENCE PROCEEDINGS
2022

Marco Bertolusso, Giovanni Pettorru, Michele Spanu, Mauro Fadda, Mariella Sole, Matteo Anedda, Daniele D. Giusto., A passive Wi-Fi based monitoring system for urban flows detection
Collection: IAICT 2022
Organization: IEEE
This paper presents an innovative vehicle monitoring system based on Wi-Fi sniffing devices and real-time data processing using ML techniques. Our solution involves the construction of a neural network-based multiclass classifier that can classify the incoming Wi-Fi signal from many sources based on the received signal strength. The solution was carried out by training the NN to predict different output classes corresponding to different vehicular and several pedestrian speed ranges
ieeexplore.ieee.org/document/9887478

CONFERENCE PROCEEDINGS
2022

Marco Bertolusso, Michele Spanu, Giovanni Pettorru, Matteo Anedda, Mauro Fadda, Roberto Girau, Massimo Farina, Daniele D. Giusto, A Machine Learning-based Approach for Vehicular Tracking in Low Power Wide Area Networks
Collection: BMSB 2022
Organization: IEEE
This paper addresses the issue of monitoring and tracking people and vehicles within smart cities. The actors in this work jointly cooperate in sensing, sensible data processing, anonymized data delivery, and data processing, with the final goal of providing real-time mapping of vehicular and pedestrian concentration conditions. The classification of conditions can bring out critical situations that can be communicated in real-time to citizens.
ieeexplore.ieee.org/document/9828755

CONFERENCE PROCEEDINGS
2022

Giovanni Pettorru, Marco Bertolusso, Michele Spanu, Mariella Sole, Matteo Anedda, Daniele Giusto, Implementation of a Multisensors Fire-Fighting Monitoring System for Forest Protection
Collection: CSCI 2023
Organization: IEEE
ieeexplore.ieee.org/abstract/document/10216586

CONFERENCE PROCEEDINGS
2020

Alessandro Floris, Roberto Girau, Simone Porcu, Luigi Atzori, Giovanni Pettorru, Implementation of a Magnetometer based Vehicle Detection System for Smart Parking applications
Organization: IEEE
The vehicle detection can be considered as the most important task in Smart Parking systems as it allows to automatically monitor the occupancy state of the parking spots in a city. In this paper, we implement and test a vehicle detection system based on a magnetometer sensor, which is part of a complete Smart Parking system under development at the University of Cagliari.
ieeexplore.ieee.org/document/9239005

TEACHING ACTIVITIES

LESSONS/LECTURES
2023

Università degli studi di Cagliari , Cagliari
Communications networks
Character: Tutor

LESSONS/LECTURES
2022

University of Cagliari , Cagliari
Communication networks
Character: Tutor

LESSONS/LECTURES
2021

University of Cagliari , Cagliari
Communication networks
Character: Tutor