

CURRICULUM VITAE EUROPEAN FORMAT



PERSONAL INFORMATION

Name **MARCELLO PIETRI**
E-mail MARCELLO.PIETRI@UNIMORE.IT
Nationality Italian

WORK EXPERIENCE

- Period (from – to) **2023 - now**
 - Employer Università degli Studi di Modena e Reggio Emilia
 - Type of business or sector DISMI - Dipartimento di Scienze e Metodi dell'Ingegneria
 - Occupation or position held Researcher, Assistant Professor.
- Main activities and responsibilities ICT; Industry 5.0; IoT/IIoT; Digital Twin; 5G/6G MEC, Smart City, Ecosystems and Data Fusion

- Period (from – to) **2015 - 2023**
 - Employer Freelancer
 - Type of business or sector Information and Communication Technology
 - Occupation or position held Professor, Senior Consultant and IT manager
- Main activities and responsibilities ICT; Industry 4.0; IoT, networks, protocols and cyber security; assets and suppliers management

- Period (from – to) **2015 - 2023**
 - Employer Ministero dell'Istruzione, dell'Università e della Ricerca
 - Type of business or sector Public Administration
 - Occupation or position held ICT Professor

- Period (from – to) **02/2014-02/2015**
 - Employer ---
 - Type of business or sector c/o Azienda USL di Modena
 - Occupation or position held Senior Consultant
- Main activities and responsibilities Acquired and given skills: GNU/Linux systems; Microsoft Server (AD, Policy, Proxy, IIS, MS SQL, ...); design and realization of security systems (IDS, IPS, Firewall, Monitoring, ISO 27001, RID/CIA); Management and maintenance of data centers; Suppliers management.

- Period (from – to) **02/2012-02/2014**
 - Employer Università degli Studi di Modena e Reggio Emilia
 - Type of business or sector CRIS (Centro di Ricerca Interdipartimentale sulla Sicurezza e Prevenzione dei Rischi)
 - Occupation or position held Postdoc / research associate
- Main activities and responsibilities Sterilmed international project (New production process for medical bags based on RadioFrequency sterilization and ICT); design, management and monitoring of SCADA systems, large cloud systems.

- Period (from – to) **01/2011-02/2012**
 - Employer Embit
 - Type of business or sector ITC - Embedded and Wireless solutions

- Main activities and responsibilities Whole realization (project, OS, software, manuals) of EMB-GATE920T: a gateway among heterogeneous communication protocols (eg. Eth 802.3, Wi-Fi 802.11, GSM/ GPRS/ HSDPA, Modbus, etc.) that enables the control of wireless networks (as 802.15.4, ZigBee, WMBus, etc.).
- Period (from – to) **1998 - 2010**
 - Employer Freelancer
 - Type of business or sector Information and Communication Technology
- Main activities and responsibilities System analyst, designer web, technical assistance, design, analysis and development of systems and software for small and medium industry.

EDUCATION AND TRAINING

- Period 15/07/2015
- Title of qualification awarded Teaching qualifying examination - Information technology
 - Organization Alma mater studiorum Università di Bologna
- Period 17/02/2014
- Title of qualification awarded Ph.D. in Information and Communication Technology
 - Organization Università degli Studi Modena e Reggio Emilia
 - Thesis Title Monitoring Solutions for Ultra-Large-Scale Systems
 - Brief Description The thesis evaluates and proposes innovative monitoring solutions, ranging from embedded systems to managing large data flows in Ultra-Large-Scale systems. Specifically, it provides effective solutions for collecting, storing, and managing big data by proposing innovative and decentralized architectures that are scalable and robust. It also presents adaptive management algorithms for real-time monitoring of large data flows.
- Period 01/02/2012
- Title of qualification awarded Government exam for profession engineer
 - Organization Università degli Studi Modena e Reggio Emilia
- Period 22/09/2010
- Title of qualification awarded Master's Degree in Computer science - graduated 110/110 cum laude
 - Organization Università degli Studi Modena e Reggio Emilia
 - Thesis Title Communication-Saving Techniques for Data Acquisition in the Pegasus Intelligent Transport System
- Period 2008-2010
- Title of qualification awarded Study awards
 - Organization Università degli Studi Modena e Reggio Emilia
- Period 08/10/2008
- Title of qualification awarded Bachelor's Degree in Computer science
 - Organization Università degli Studi Modena e Reggio Emilia
 - Thesis Title Approximate Sequence Matching: Implementation and Comparative Performance Analysis of Portable and Efficient Techniques

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE(S) **ITALIAN**

OTHER LANGUAGE(S)

<ul style="list-style-type: none"> • Listening • Reading and Writing • Speaking 	<p>ENGLISH excellent excellent good</p>
<p>SOCIAL SKILLS AND COMPETENCES</p>	<p>Attitude to work in multicultural / international environments; teamworking.</p>
<p>ORGANISATIONAL SKILLS AND COMPETENCES</p>	<p>Management and coordination of teams and suppliers. Drafting of worktops and processes.</p>
<p>TECHNICAL SKILLS AND COMPETENCES</p>	<ul style="list-style-type: none"> • Involvement as RTD-A in project 2022 PNRR ECOSISTER Ecosystem for Sustainable Transition in Emilia-Romagna ECS00000033. • Involvement at European project EUROSTARS* 2010-2012 Sterilmed (New production process for medical bags based on RadioFrequency sterilization and ICT) – Years n. 2 from 01/Feb/2012 to 31/Jan/2013 e dal 01/Feb/2013 al 31/Jan/2014 – as assistant professor at Centro di Ricerca Interdipartimentale prevenzione dei rischi (CRIS) – Università di Modena e Reggio Emilia. • Involvement at European industry 2015 Pegaus project, perform at ISGroup- university of Modena and Reggio Emilia in collaboration with Octotelematics, SITECO Informatica, Almaviva TSF, Raptch, WiLab IEIIT-CNR, Fondazione Alma Mater, Netsens, ENEA, AvMap, Infoblu, Meta System and MetaSystem Group for the development of PEGASUS (ProgEtto per la Gestione della mobilità Attraverso Sistemi infotelematici per l'ambito Urbano, per la Sicurezza di passeggeri, veicoli e merci). • Research project at the University of Modena and Reggio Emilia - ISGroup 2008 focused on studying and comparing Approximate Sequence Matching techniques in the context of assisted translation and genetic research. • Internship at the CINECA supercomputing center in Bologna, in collaboration with computer scientists from the ENI team (AGIP). The mission involved developing techniques for oil exploration using MPI and PETSc libraries for parallel computing. • Other developed projects at University of Modena and Reggio Emilia are about: Word Sense Disambiguation (WSD) (schema disambiguation - knowledge-driven methods e corpus based); shortest path algorithms (C, DoxyGen, Glade, GTK+); online data-centric applications to manage pictures collections, with full and partial text search, image search, similarity search and nearest search (HTML, JSP, Java, Tomcat, PostgreSQL, Mpeg7, XML); Parallel computing (Fortran, C, C++, MPI, LINPAC, ScaLAPACK); P2P File System with stream compression (Java, RMI, MySQL, socket programming); Machine learning and statistical learning, Support Vector Machine, Bayesian Decision Theory, least squares, Maximum-Likelihood, Fisher linear discriminant, loss functions and Empirical risk minimization, Tikhonov regularization, RHKS and Landweber (Matlab, R); Automatic boards cutting machine, programmable with different lengths (C#); Management system for accounting and management of warehouse (php, hmtl5, css). SCADA systems and MES. Gateways, prototypes and embedded systems (IOT / Edge). Training and teaching platforms.
<p>OTHER SKILLS AND COMPETENCES</p>	<p>Digital skills: Information processing, communication, creation of content, security, Resolution of problems, systems, design and management - level: expert/advanced.</p> <p>Other skills/experiences: Promotion, marketing and sales of technological products and software on behalf of company as Samsung, Microsoft and Canon from 2007 to 2009. Photography and digital devices course at Canon corporate headquarters in Milano - 2009. Military community service at Croce Rossa Italiana - from 07/2004 to 05/2005. Chemical & physical analysis of water at AIMAG in Limidi, Soliera (MO) - 2003.</p>
<p>DRIVING LICENCE(S)</p>	<p>A, B, N</p>

ADDITIONAL INFORMATION

Research Activity:

- Digital Twin and IoT/IIoT
- 5G/6G MEC, Smart City, Ecosystems and Data Fusion
- Data Collection and analysis for Complex Industrial Systems
- Monitoring and Security in Large Scale Systems
- Wireless Embedded Solutions

Academic teaching activities:

- Dipartimento di Scienze e Metodi dell'Ingegneria – UniMoRe - sede di Reggio Emilia Sistemi informativi ING-INF/05 Laurea in Ingegneria Gestionale - Docente titolare - a.a. 2024/2025 CFU 9
- Dipartimento di Scienze e Metodi dell'Ingegneria – UniMoRe - sede di Reggio Emilia Sistemi informativi ING-INF/05 Laurea in Ingegneria Gestionale - Docente titolare - a.a. 2023/2024 CFU 6
- Dipartimento di Scienze e Metodi dell'Ingegneria – UniMoRe - sede di Reggio Emilia Sistemi informativi ING-INF/05 Laurea in Ingegneria Gestionale - Docente titolare - a.a. 2022/2023 CFU 4
- Dipartimento di Scienze e Metodi dell'Ingegneria – UniMoRe - sede di Reggio Emilia sistemi informativi ING-INF/05 Laurea in Ingegneria Gestionale - Docente titolare - a.a. 2021/2022 CFU 4
- Dipartimento di Scienze e Metodi dell'Ingegneria – UniMoRe - sede di Reggio Emilia sistemi informativi ING-INF/05 Laurea in Ingegneria Gestionale - Docente titolare - a.a. 2020/2021 CFU 3
- Dipartimento di Scienze Fisiche, Informatiche e Matematiche – UniMoRe - sede di Modena Complementi di programmazione INF/01 Laurea in Informatica - Docente titolare - a.a. 2022/2023 CFU 6
- Dipartimento Di Scienze Chimiche E Geologiche– UniMoRe - Sede Di Modena Metodi e strumenti della comunicazione digitale ING-INF/05 Laura Magistrale in Didattica e Comunicazione delle Scienze - Docente titolare - a.a. 2022/2023 CFU 6
- Dipartimento Di Scienze Chimiche E Geologiche– UniMoRe - Sede Di Modena Metodi e strumenti della comunicazione digitale ING-INF/05 Laura Magistrale in Didattica e Comunicazione delle Scienze - Docente titolare - a.a. 2021/2022 CFU 6
- Dipartimento di Scienze Economiche e Aziendali – Università di Parma Informatica - Mod. Base - ak ING/01 Laurea in Economia e Management - Docente titolare - a.a. 2021/2022 CFU 3
- Dipartimento di Scienze Economiche e Aziendali – Università di Parma Informatica - Mod. Avanzato - ak ING/01 Laurea in Economia e Management - Docente titolare - a.a. 2021/2022 CFU 3
- Dipartimento di Scienze Economiche e Aziendali – Università di Parma Informatica - Mod. Base - lz ING/01 Laurea in Economia e Management - Docente titolare - a.a. 2021/2022 CFU 3
- Dipartimento di Scienze Economiche e Aziendali – Università di Parma Informatica - Mod. Avanzato - lz ING/01 Laurea in Economia e Management - Docente titolare - a.a. 2021/2022 CFU 3
- Dipartimento di Scienze Economiche e Aziendali – Università di Parma Informatica - Mod. Base e Mod. Avanzato - ak ING/01 Laurea in Economia e Management - Docente titolare - a.a. 2020/2021 CFU 6
- Dipartimento di Scienze Economiche e Aziendali – Università di Parma Informatica - Mod. Base e Mod. Avanzato - lz ING/01 Laurea in Economia e Management - Docente titolare - a.a. 2020/2021 CFU 6
- Dipartimento di Scienze Economiche e Aziendali – Università di Parma Informatica - Mod. Base e Mod. Avanzato - ak ING/01 Laurea in Economia e Management - Docente titolare - a.a. 2019/2020 CFU 6

ADDITIONAL INFORMATION

- Dipartimento di Scienze Economiche e Aziendali – Università di Parma Informatica - Mod. Base e Mod. Avanzato - IZ ING/01 Laurea in Economia e Management - Docente titolare - a.a. 2019/2020 CFU 6
- Dipartimento di Scienze Economiche e Aziendali – Università di Parma Informatica - Mod. Base e Mod. Avanzato SECS-S/01 Laurea in Economia e Management - Docente titolare - a.a. 2018/2019 CFU 6
- Dipartimento di Scienze Fisiche, Informatiche e Matematiche – UniMoRe - sede di Modena Protocolli e Architetture di rete ING-INF/05 Laurea Triennale in Informatica, Laurea Magistrale in Matematica Assistente di laboratorio a.a. 2013/2014 CFU 6
- Dipartimento di Scienze Fisiche, Informatiche e Matematiche – UniMoRe - sede di Modena Protocolli e Architetture di rete ING-INF/05 Laurea Triennale in Informatica, Laurea Magistrale in Matematica Assistente di laboratorio a.a. 2012/2013 CFU 6

Non-academic teaching activities:

- Corsi di System Integrator (2021 – ore 20) Coder per l'industria 4.0 (2020 – ore 48) Accompagnamento in Azienda (2021-22 – ore 129) New Skills 4.0 Lavorare Nella Fabbrica Interconnessa - formazione finanziata EU Regione Emilia Romagna (Rif. PA 2019-11734/RER).
- Corso Java (e RDBMS avanzato) 13/05/2019 al 01/07/2019 (ore 148) nell'ambito del progetto Forma.Temp codice P02019SELEF101;
- Corso di Perfezionamento in "Sistemi e servizi basati su Internet" – FIO6PD 2013 – Forze armate base di Chiavari.
- Corso di MongoDB (linguaggi di programmazione Java Python) – Fondimpresa AVS/151/20
- Competenze ICT per nuova occupazione qualificata – Prog. Analista Programmatore – formazione finanziata EU Regione Emilia Romagna (2018 – ore 86) (Rif. PA 2018-11330/RER);
- Corso Software Developer - FormaTemp n. 22-280/001 – (ore 56).
- Corsi di preparazione per l'esame di abilitazione all'esercizio della libera professione ott-nov 2015, 2018 e 2019.
- Corso per Data Scientist (Rif. Tecniche per la progettazione e gestione di data base) – Formaconf - Regione Marche - Cod. 1083338 –Ott. 2022 (ore 16).
- Corso "Cyber Security Manager" – digital transformation management – Datef Bolzano (2023 – ore 24) (rif. CUP B51B22000670008 prj 30785)
- Corso "Cyber Security Manager ed. 2" – digital transformation management – Datef Bolzano (2023 – ore 24) (rif. CUP B51B22000670008 prj 30785)
- Corso "Cyber Security Expert e Data Protection" - "Le competenze al centro dello sviluppo sostenibile della filiera meccanica" – (2023 – ore 48) (Rif. PA. 2023-19529/RER)
- Corso "AI e Big Data e IoT" per il Ministero delle Imprese e del Made in Italy - (2023 ore 16) (rif. OPP-2023-02-00142)

Publications:

Scopus profile <https://www.scopus.com/authid/detail.uri?authorId=55635365600>

Metrics overview: Documents by author 8, Citations 80, h-index 4

- M. Picone, L. Bedogni, M. Pietri, M. Mamei and F. Zambonelli, "Digital Twins & Fluid Computing in the Edge-to-Cloud Compute Continuum," 2024 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops), Biarritz, France, 2024, pp. 221-226, doi: 10.1109/PerComWorkshops59983.2024.10503446
- M. Picone, R. Morandi, V. Villani, M. Pietri and L. Bedogni, "Towards Operator Digital Twins in Industry 5.0: Design Strategies & Experimental Evaluation," 2024 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops), Biarritz, France, 2024, pp. 51-56, doi: 10.1109/PerComWorkshops59983.2024.10502969
- L. Bedogni, M. Picone, M. Pietri, M. Mamei and F. Zambonelli, "Fluid Computing in the Internet of Things: A Digital Twin Approach," 2024 IEEE 21st Consumer Communications & Networking Conference (CCNC), Las Vegas, NV, USA, 2024, pp. 412-418, doi: 10.1109/CCNC51664.2024.10454878
- M. Picone, V. Villani, M. Pietri and L. Bedogni, "Towards Coordinating Machines and Operators in Industry 5.0 through the Web of Things," 2024 IEEE 21st Consumer Communications & Networking Conference (CCNC), Las Vegas, NV, USA, 2024, pp. 01-06, doi: 10.1109/CCNC51664.2024.10454715
- Marcello Pietri, Natalia Selini Hadjidimitriou, Marco Mamei, Marco Picone, Enrico Rossini, "Traffic and Resource Optimization in 5G Multi-Layer Edge Networks", NetMob 2023, Madrid,

- Spain, October 4-6 2023, Pages 143-144 - (Candidate for the Best Paper award)
- Enrico Rossini, Marcello Pietri, Roberto Cavicchioli, Marco Picone, Marco Mamei, Roberto Querio, Laura Colazzo, Roberto Procopio, "5G MEC Architecture for Vulnerable Road Users Management Through Smart City Data Fusion", ACM MobiCom 2023: Proceedings of the 29th Annual International Conference on Mobile Computing and Networking - October 2023 - Article No.: 112 Pages 1-3 doi.org/10.1145/3570361.3614070 BibTex
 - Marcello Pietri, Stefania Tosi, Mauro Andreolini, Riccardo Lancellotti, "A Scalable Monitor for Large Systems", BOOK: Cloud Computing and Services Sciences (from CLOSER 14 Revised Selected Papers), December 2015, Springer International Publishing, pag. 100--116, isbn 978-3-319-25414-2, doi 10.1007/978-3-319-25414-2_7
 - Marcello Pietri, Stefania Tosi, Mauro Andreolini, Michele Colajanni, "Adaptive, Scalable and Reliable Monitoring of Big Data on Clouds", Special Issue on Scalable Systems for Big Data Management and Analytics of the Journal of Parallel and Distributed Computing (JPDC), Volumes 79-80, May 2015, Pages 67-79.
 - Mauro Andreolini, Sara Casolari, Marcello Pietri, Stefania Tosi, *Adaptive, Dynamic, and Resilient Systems*, chapter "Resilient and Adaptive Networked Systems". Auerbach Publications, ISBN: 1439868484 ISBN-13: 9781439868485. June 2014.
 - Marcello Pietri, Stefania Tosi, Mauro Andreolini, Michele Colajanni, "Monitoring Large Cloud-Based Systems", CLOSER - 4th International Conference on Cloud Computing and Services Science, Barcelona, Spain, 3-5 April 2014.
 - Mauro Andreolini, Michele Colajanni, Marcello Pietri, Stefania Tosi, "Real-Time Adaptive Algorithm for Resource Monitoring", CNSM 2013 - 9th International Conference on Network and Service Management, Zurich, Switzerland, October 14-18 2013.
 - Mauro Andreolini, Michele Colajanni, Marcello Pietri, Stefania Tosi, "Adaptive Data Gathering for Enhancing Scalability in Large Scale Systems", InfQ 2013 - 4th Workshop of the Italian group on Quantitative Methods in Informatics, Sorrento (NA), June 2013.
 - Mauro Andreolini, Michele Colajanni, Marcello Pietri, "A Scalable Architecture for Real-Time Monitoring of Large Information Systems", 2012 IEEE Second Symposium on Network Cloud Computing and Applications, London, UK, December 2012, pp.143-150.
 - Mauro Andreolini, Michele Colajanni, Marcello Pietri and Alessandro Guido, "A scalable and robust architecture for monitoring large scale systems", InfQ Workshop 2012, IMT Institute for Advanced Studies Lucca, Italy, July 2012.
 - Marcello Pietri, Riccardo Lancellotti, "A Monitoring System for Multiple Resources Supporting Smart House and Building Automation", E-Society International Conference, Berlin, Germany, 10-13 March 2012, pp. 359-366.

Courses and Conferences:

Speaker for the following publications at their respective conferences:

- "A Monitoring System For Multiple Resources Supporting Smart House And Building Automation" – Berlin, Germany - March 10-13, 2012.
- "A Scalable Architecture for Real-Time Monitoring of Large Information Systems" - London, UK - December 3-4, 2012.
- "Real-time adaptive algorithm for resource monitoring" - Zurich, Switzerland - October 14-18, 2013.

Keynote Speeches:

- 8th National PTV Vision Users Conference (presentation of the university project on Communication-saving techniques for data acquisition in ITS Pegasus – a project for Mobility Management Through Infotelematics Systems for Urban Areas, ensuring the safety of passengers, vehicles, and goods)
- InfQ Workshop 2012, organized by the Italian Group on Quantitative Methods in Informatics, titled "Future Internet and Global Computing: Services, Architectures, Models and Performance Evaluation", at IMT Institute for Advanced Studies, July 5-6, 2012, Lucca.
- InfQ Workshop 2013, titled "Performance evaluation and monitoring in the era of Cloud Computing", June 13-14, 2013, Sorrento (NA).

Participation in:

- BIGDIVE 2012, focused on "Hacking, Development, Visualization and Data Science", Torino, Italy, October 1-26, 2012.
- Hot Topics in Secure and Dependable Computing for Critical Infrastructures, Cortina d'Ampezzo, Italy, January 15-19, 2012. Project: "Sensing Capabilities Go Wireless".
- NetMob, the primary conference on the analysis of mobile phone datasets in social, urban, societal, and industrial problems, Madrid, Spain, October 2023.

Editorial Board / Associate Editor Roles:

- 18th IFAC Symposium on Information Control Problems in Manufacturing (INCOM 2024)
- Journal of Advances in Pervasive Computing Applications and Systems.

I authorize the processing of the above personal data, in accordance with the D.lgs. 196/2003 and the D.E. n. 679/2016.