


PERSONAL INFORMATION

Marco Puccini

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Gender Male | Date of birth 12 July 1979 | Nationality Italian

WORK EXPERIENCE

Apr 2023 – Present

HPC Data Engineer

CINECA, SCAI-Data Management, Casalecchio di Reno (BO), Italy

- Projects
- NBFC (National Biodiversity Future Centre) [<https://www.nbfc.it/>].
 - OptimESM (Optimal High Resolution Earth System Models for Exploring Future Climate Changes) [<https://cordis.europa.eu/project/id/101081193>].
 - Geo-Inquire (Geosphere INfrastructures for QUEStions into Integrated REsearch) [<https://www.geo-inquire.eu/>].
 - EO4EU [<https://eo4eu.eu/>].
 - Bologna Digital Twin.

Sep 2020 – Mar 2023

Research Fellow

ENEA TERIN-ICT, Rome, Italy

Main activities

Solution architect for Cultural Heritage web services. Data engineer. ENEA mongoDB & Ceph clusters admin. Containerized applications maintainer and VMs sysadmin. DevOps and MLOps support for research activities.

- Projects
- DTECH (Digital Twins Environment for Cultural Heritage). Design and development a microservices based platform to manage digital copies of cultural heritage assets for their owner.
 - M.I.A. Fashion (<https://ict.enea.it/mia/>). Models and Solutions for Artificial Intelligence in the Luxury Fashion sector. Design and deploy the data pipeline to serve ML models.
 - T-winning (<https://ict.enea.it/t-winning/>). Creation and prototyping of new collections and products for the Tod's Company through the development of modern processing technologies. Design and deploy the data pipeline to serve ML models.
 - RAFAEL (<https://www.progetto-rafael.it/>). System for forecasting and managing risk on critical infrastructures in Southern Italy. Design and deploy the project DataLake.
 - Mission Innovation (<http://mission-innovation.net/>). Catalysing a decade of action and investment in research, development and demonstration to make clean energy affordable, attractive and accessible for all. Design and development of REST API service, python module and web UI of the IEMAP platform to accelerate research on materials for energy.
 - OpenIACS (<https://open-iacs.eu/>). Open LOD platform based on HPC capabilities for Integrated Administration and Control System of Common Agrarian Policy. Design, development and deployment of containerized services for data pipeline.

Nov 2019 – Jun 2020

ICT consultant

Sys-Man S.r.l. for ENEA DTE-ICT, Rome, Italy

Main activities

Development of advanced services integration for 3D visualization of Cultural Heritage digital copies in the ECODIGIT ecosystem.

- Projects
- ECODIGIT (<http://ecodigit.dtcclazio.it/>). Proof of concept of middleware component for a digital ecosystem for cultural heritage. Containerized PoC development.
 - ARCH (<https://savingculturalheritage.eu/>). Preserve areas of cultural heritage from hazards and risks. Support and Internship tutor for 3D softwares on the ENEA It@cha platform.
 - IKAROS, Flying Dream (<https://ict.enea.it/ikaros/>). Experimental Electronic Aeronautic Yard.

Jan 2019 – Oct 2019 ICT consultant

Evodevo S.r.l. for ENEA DTE-ICT, Rome, Italy

Main activities Survey on NoSQL technologies. Deploy and test experimental mongoDB cluster.

Sep 2016 – Jan 2017 Independent contractor

University of Rome “La Sapienza”, Department of Mechanical and Aerospace Engineering, Rome, Italy

Main activities Bubbles cavitation’s chamber design.

- Projects
- BIC (<https://cordis.europa.eu/project/id/339446>). Cavitation across scales: following Bubbles from Inception to Collapse.

Jan 2013 – Dec 2015 Fellowship

CNR-INM Institute of Marine Engineering (formerly CNR-INSEAN), Rome, Italy

Main activities Evaluation and definition of EEDI (Energy Efficiency Design Index) for Ro-Ro cargo ships: form factor, scale effect, correlation between towing tank tests on scaled models with real ships, uncertainty analysis.

- Projects
- RITMARE (<http://www.ritmare.it/>). Support integrated policies to safeguard the marine environment, allow a sustainable exploitation of its resources, launch a strategy of prevention and mitigation of natural impacts.

Oct 2015 – Present Researcher / Independent Consultant

University of Rome “La Sapienza”, Departments of Sciences and Medical and Surgical Biotechnologies and Department of Molecular Medicine

Main activities Data processing and analysis of recorded radio-isotopic irradiation on a LuYAP:Ce array of crystal pixels

Oct 2009 – Jul 2011 Internship

TakeAir S.r.l., Viale delle Milizie 114 00192 Rome, Italy

Main activities Air quality forecasting system, build-up of the geo-referenced emissions database. Linux sysadmin assistant.

EDUCATION AND TRAINING

2012 Master degree in Physics

University of Rome “La Sapienza”, Italy

Supervisors Prof. Franco Meddi and Eng. Marialuisa Mongelli

Title *Validation of numerical models using seismic monitoring remotely of structural elements for conservation of cultural heritage.*

Description This work aims to build up a survey methodology that integrates a fem model (finite element method) with seismic tests on shake table. The methodology employs measures of displacements of a scaled structure to improve the related fem model over a HPC infrastructure that allows to make remote the entire process

PERSONAL SKILLS

Mother tongue Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C2	B2	B2	C1

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

Digital competences	SELF-ASSESSMENT				
	Information Processing	Communication	Content creation	Safety	Problem solving
	Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

[Digital competences - Self-assessment grid](#)

Computer skills

- GNU/Linux Centos, Debian, Arch
- Apache HTTP, Nginx
- Docker, Docker-compose, Podman, Kubernetes
- mongoDB, mariaDB, sqlite, Virtuoso, Redis
- MQTT
- AFS, GPFS (IBM Spectrum Scale), Ceph, AWS S3
- SSH, shell scripting, Git
- Vagrant, Ansible
- Python (Numpy, Pandas, Matplotlib, Seaborn, Jupyter notebook), JS (Vue.js, Node.js, Express)
- HTML, CSS
- \LaTeX , Markdown

Driving licence B

PUBLICATIONS

- [1] Claudio Ronchetti, Marco Puccini, Sergio Ferlito, Simone Giusepponi, Filippo Palombi, Francesco Buonocore, and Massimo Celino. "Machine learning techniques for data analysis in materials science". In: *2022 AEIT International Annual Conference (AEIT)*. Oct. 2022, pp. 1–6.
- [2] Marco Puccini, Antonio Camassa, Maria Luisa Mongelli, Samuele Pierattini, Silvio Migliori, Marco Canciani, Giovanna Spadafora, and Mauro Saccone. "Integrated Survey and 3D Processing on Enea CRESCO Platform: the Case Study of San Nicola in Carcere in Rome". In: *Journal of Physics: Conference Series* 2204.1 (Apr. 2022), p. 012101. URL: <https://dx.doi.org/10.1088/1742-6596/2204/1/012101>.
- [3] Luca Indovina, Raffaele Scafè, Marco Puccini, Rosanna Pellegrini, and Roberto Pani. "A new generation of scintillation detectors with identification of events undergoing multiple interactions for gamma-ray imaging and spectroscopy". In: *Applied Radiation and Isotopes* 184 (2022), p. 110189. URL: <https://www.sciencedirect.com/science/article/pii/S0969804322000884>.
- [4] María Luisa Vázquez de Ágredos Pascual, Roberta Fantoni, Massimo Francucci, Massimiliano Guarneri, Marialuisa Mongelli, Samuele Pierattini, Marco Puccini, Sergio Ferrero Gil, Juan Carlos Izquierdo Garay, and Juan Manuel Gil Bordallo. "3D Model Acquisition and Image Processing for the Virtual Musealization of the Spezieria di Santa Maria della Scala, Rome". In: *Heritage* 5.2 (2022), pp. 1253–1275. URL: <https://www.mdpi.com/2571-9408/5/2/65>.
- [5] Marco Puccini, Angelo Mariano, Giovanni Cannataro, and Giacinto Caretto. *Prestazioni del filesystem basato su Ceph nell'infrastruttura ENEAGRID*. Tech. rep. ENEA, 2022.
- [6] Raffaele Scafè, Marco Puccini, Rosanna Pellegrini, and Roberto Pani. "Pulse-Height and 2-D Charge-Spread Single-Pixels Studies on a LuYAP:Ce Scintillation Array". In: *Instruments* 5.3 (2021). URL: <https://www.mdpi.com/2410-390X/5/3/26>.

- [7] Marco Canciani, Mauro Saccone, Giovanna Spadafora, Silvio Migliori, Marialuisa Mongelli, Marco Puccini, Andrea Quintiliani, Andrea Gallia, and Catia. Masetti. "Modelli 3D e dati GIS: una loro integrazione per lo studio e la valorizzazione dei beni culturali." In: *Archeomatica* 11 (2020), pp. 18–23.
- [8] Luigi Asprino, Antonio Budano, Marco Canciani, Luisa Carbone, Miguel Ceriani, Ludovica Marinucci, Massimo Mecella, Federico Meschini, Marialuisa Mongelli, Andrea Giovanni Nuzzolese, Valentina Presutti, Marco Puccini, and Mauro Saccone. "EcoDigit-Ecosistema Digitale per la fruizione e la valorizzazione dei beni e delle attività culturali del Lazio". In: *Atti del IX Convegno Annuale AIUCD. La svolta inevitabile: sfide e prospettive per l'Informatica Umanistica*. Ed. by Cristina Marras, Marco Passarotti, Greta Franzini, and Eleonora Litta. Quaderni di Umanistica Digitale. Milano: Università Cattolica del Sacro Cuore, Jan. 2020. URL: <http://amsacta.unibo.it/6316/>.
- [9] Marialuisa Mongelli, Giulia Chellini, Silvio Migliori, Antonio Perozziello, Samuele Pierattini, Marco Puccini, and Alessandro Cosma. "Photogrammetry and structured light: comparison and integration of techniques in survey of the Corsini Throne at Corsini Gallery in Rome". In: *Proc. 2019 IMEKO TC-4 International Conference on Metrology for Archaeology and Cultural Heritage (Florence, Italy, December 4-6, 2019)*. IMEKO, 2019.
- [10] Raffaele Scaf , Rosanna Pellegrini, Marco Puccini, Maria N. Cinti, and Roberto Pani. "Rejection of events undergoing multiple interactions within a scintillation crystal array based on spatial charge spread discrimination for gamma-ray imaging". In: *Nuclear Inst. and Methods in Physics Research, A* 870 (Oct. 2017), pp. 97–102.
- [11] Raffaele Scaf , Rosanna Pellegrini, Maria N. Cinti, Marco Puccini, and Roberto Pani. "A Novel Scintillation Imager with Charge-spread Discrimination. Analytical Models Suitable for Crystal Arrays". In: *Nuclear Inst. and Methods in Physics Research, A* 833 (Oct. 2016), pp. 110–121.
- [12] Marco Puccini, Mongelli Mongelli, Francesco Iannone, and Silvio Migliori. *Ecodigit: goals and activities report*. Tech. rep. ENEA, 2020.
- [13] Marco Puccini, Francesco Iannone, Silvio Migliori, and Marialuisa Mongelli. *Survey of the modern database technologies*. Tech. rep. ENEA, 2019.
- [14] Marco Puccini and Angelo Olivieri. *Measurement methodology of submersions with the new system pantographs*. Tech. rep. CNR-INSEAN, 2016.
- [15] Marco Puccini and Angelo Olivieri. *Indirect measurement of the deformation of the rails 1 INSEAN basin: real-time correction of the measurement of the dives for testing in free submersion conditions*. Tech. rep. CNR-INSEAN, 2016.