

PERSONAL INFORMATION

STEFANO COZZINI

 omissis
 +39 omissis  +39 366 9393969
 stefano.cozzini@areasciencepark.it

Sex omissis | Date of birth omissis | Nationality omissis

WORK EXPERIENCE

Current Position	Director Istituto Ricerca ed Innovazione Tecnologica Area Science Park Padriciano, 99 34149 Trieste, Italy
from 01/99 – to 02/20	Development Scientist CNR/IOM DEMOCRITOS National Simulation Center c/o SISSA via Bonomea 265 Italy http://www.iom,cnr.it/ .
from 11/11 to 02/23	Founder and Shareholder eXact lab srl, a CNR/IOM spin-off company via Crispi 56. Trieste, Italy http://www.exact-lab.it/
from 01/11 to 12/12	Part Time Consultant for UNDP/ UNoPS as e-infrastructure expert for climate data repositories within the AAP (Africa Adaptation Program) project
from 06/03 to 02/12	Part time Consultant for High Performance and Grid Computing at UNESCO/ ICTP, International Center of Theoretical Physics
from 01/97 to 12/98	Member of the HPC group at CINECA
from 05/95 to 12/96	Post-doc researcher at Physics department of the University of Seville (Spain)

PROFESSIONAL PROFILE

Dr. Stefano Cozzini has over 20 years' experience in the area of scientific computing and HPC and data management e-infrastructures. His main professional activity is to plan and install and then efficiently maintain IT infrastructures. He is presently director of the Research and Technology Institute of Area Science Park, where he coordinates team of more than 35 people in maintaining cutting-edge research infrastructure in the area of Genomic and Epigenomic (LAGE: Laboratory for Genomic ed Epigenomic), computational and data infrastructure (LADE: Laboratory for Data Engineering) and in the area of electron microscopy for materials (LAME: laboratory for electron Microscopy), all of them delivering high level services for scientific institutions.

S.C. has considerable experience in leading and coordinating research infrastructure projects at national and international level. He is currently scientific coordinator of the PRP@CERIC infrastructure project at national level and is also scientific coordinator for all the Area Science Park activities within NFFA-DI infrastructural project, both of them funded by PNRR plan. He also serves regularly as referee for international conference and scientific review and served as scientific referee and scientific advisor of several European projects.

S.C. has a large teaching experience in the above areas. Over the last 20 years he has been organizer and director of more than 20 International training activities on High Performance and GRID CLOUD and Data Infrastructures all over the world. From 2014 on he contributed actively to the International Master in High Performance Computing promoted by Sissa and ICTP (<http://www.mhpc.it>) where he was its first coordination till 2016. He is also in the scientific council of the recently launched DSSC Laurea Magistrale (<https://dssc.units.it/>) where coordinates and teaching the course "Foundation of HPC".

His main research interests are in the field of High-Performance Computing applied to computational science and industrial problems and in scientific data management Infrastructure and associated tools. In the last few years he is actively working in the area of Machine Learning to provide advanced data services on the top of computational infrastructure for heterogeneous scientific communities.

TEACHING ACTIVITIES

- from 03/21 to present member of scientific council of the Applied Data Science and Artificial Intelligence at University of Trieste
- from 01/17 to present member of the DSSC board (dssc.units.it)
coordinator and professor of the Foundation in HPC course (9 credits)
professor of Advanced Data Management (6 credit)
- from 01/2014 to 12/2020 member of the MHPC scientific council
- from 01/2014 to 12/2019 Coordinator and teacher of the following course at MHPC
 - Computer Architecture for HPC (2014 - 2019)
 - Data management in HPC and beyond (2014 -2019)
- from 01/2014 to 12/2016 scientific coordinator of the MHPC, Master in HPC jointly organized by SISSA and ICTP (www.mphc.it)

EDUCATION AND TRAINING

- 1995 PhD in Physics
University of Padova, Italy
- 1991 Laurea in Physics
University of Trento, Italy

PERSONAL SKILLS

Mother tongue

ITALIAN

Other language

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Spanish	B2	B2	B2	B2	B1
English	C1	C1	C1	C1	C1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](http://www.cedefop.europa.eu)

Organisational / managerial skills

- Excellent leadership skills
- Excellent analytical and problem solving skills
- Ability to perform complex tasks and to prioritize multiple projects.
- Ability to analyze complex problems, interpret operational needs, and develop integrated, creative solutions.
- Ability to supervise and train employees, to include organizing, prioritizing, and scheduling work assignments

Communication skills

Excellent communication skills gained through my teaching and researcher experience
Ability to interact effectively and credibly with advanced technology researchers and representatives.

Job-related skills

Demonstrated ability to strategically manage all technical and operational aspects of a complex network of high-tech laboratory facility integrated in a distributed Research Infrastructure.
Demonstrated ability to communicate with and understand the complex requirements of scientists, engineers and professional staff in the deployment of research infrastructures
Strong skills in the field of High-Performance Computing applied to computational science and industrial problems and in scientific data management Infrastructure and associated tools.
Scientifically active the area of Machine Learning to provide advanced data services on the top of computational infrastructure for heterogeneous scientific communities.
Considerable experience in leading and coordinating HPC/CLOUD and data infrastructure projects at national and international level.
Experience as Scientific Consultant for the International Organization UNESCO–ICTP/ UNDP/UNOPS
Referee for international conference and scientific review and served as scientific referee and scientific advisor of several European projects.

Supervision of undergraduate/graduate students, MHPC students

Currently Supervisor of following PhD students:

- Luis Leon Vega (2021-2024)
- Federico Barone (2021-2024)
- Tommaso Rodani (2022-2025)
- Niccolo Tosato (2023-2025)
- Yuri Gardinazzi (2023-2025)

Supervisor of 15 students in their MHPC master thesis activities

Supervisor of 7 students for their master thesis

Tutor of about 10 students for their bachelor thesis

DIGITAL SKILLS

- scientific programming, including parallel programming (openMP /MPI) paradigms, optimization techniques
- expertise in installing /using HPC libraries and packages
- sys. adm. skills for HPC infrastructure/ cloud infrastructure
- proficiency in managing large development project in scientific programming
- expertise in material simulation packages
- expertise in use Machine Learning package using python language

ADDITIONAL INFORMATION

Selected publications
in Peer-Reviewed

Journals

Tommaso Rodani, Elda Osmenaj, Alberto Cazzaniga, Mirco Panighel, Cristina Africh, Stefano Cozzini; Towards the FAIRification of Scanning Tunneling Microscopy Images. Data Intelligence 2022; doi: https://doi.org/10.1162/dint_a_00164

Ghiringhelli, Luca M; Baldauf, Carsten; Bereau, Tristan; Brockhauser, Sandor; Carbogno, Christian; Chamanara, Javad; Cozzini, Stefano; Curtarolo, Stefano; Draxl, Claudia; Dwaraknath, Shyam; , Shared metadata for data-centric materials science
Scientific Data 10 (1), 626

Deep Learning, Feature Learning, and Clustering Analysis for SEM Image Classification, R Aversa, P Coronica, C De Nobili, S Cozzini
Data Intelligence 2 (4), 513-528

Russo, Elena Tea; Barone, Federico; Bateman, Alex; Cozzini, Stefano; Punta, Marco; Laio, Alessandro; ,DPCfam: Unsupervised protein family classification by Density Peak Clustering of large sequence datasets,PLOS Computational Biology,18,10,e1010610,2022,"

Protein family annotation for the Unified Human Gastrointestinal Proteome by DPCfam clustering

F Barone, ET Russo, EN Villegas Garcia, M Punta, S Cozzini, A Ansuini, ...
bioRxiv, 2023.04. 21.537802

The first annotated set of scanning electron microscopy images for nanoscience,
R. Aversa, MH Modarres, S Cozzini, R Ciancio, A Chiusole Scientific Data 5, 180172

Neural Network for Nanoscience Scanning Electron Microscope Image Recognition,
Mohammad Hadi Modarres, Rossella Aversa, Stefano Cozzini et a, Scientific Reports 7, 13282

An I/O Analysis of HPC Workloads on CephFS and Lustre
A Chiusole, S Cozzini, D van der Ster, M Lamanna, G Giuliani
International Conference on High Performance Computing, 300-316

RegCM4: model description and preliminary tests over multiple CORDEX domains, Giorgi, F., Coppola, E., Solmon, F., Mariotti, L., Sylla, M., Bi, X., Elguindi, N., Diro, G. T., Nair, V., Giuliani, G., Cozzini, S., Guettler, I., O'Brien, T. A., Tawfik, A., Shalaby, A., Za- key, A., Steiner, A., Stordal, F., Sloan, L., and Brankovic, C.: Clim. Rev, 2012. 3439, 3441

ALADYN: a web server for aligning proteins by matching their large-scale motion
R. Potestio, T. Aleksiev, F. Pontiggia, S. Cozzini and C. Micheletti
Nucleic Acids Research 2010 38(Web Server issue):W41-W45; doi:10.1093/nar/gkq293

PiSQRD: a web server for decomposing proteins into quasi-rigid dynamical domains T. Aleksiev; R. Potestio; F. Pontiggia; S. Cozzini; C. Micheletti
Bioinformatics Vol. 25 no. 20 2009, pages 2743–2744

Selected presentations
as Invited Speaker at
conferences and
workshops

- 16/11/2023: Living in digital ecosystem: are we are aware of ? invited talk al convegno AMBIENTI DIGITALI ED ECOLOGIA UMANA 15-16 novembre 2023 Università Campus Bio-Medico di Roma
- 11/07/2019: The challenge to define and use a metadata schema within the NFFA- EUROPE project invited talk at workshop Common Format for Materials Science Data Berlin, German
- 23/09/2018: Keynote speech at CLARA conference Latin America High Performance Computing conference, Bucaramanga, Colombia
- 29/09/2017: The NFFA Europe Information and Data Repository Platform invited talk at 6th International LSDMA Symposium on "The Challenge of Big Data in Science", Karlsruhe, Germany
- 29/09/2015: Experience in setting-up a start-up in HPC, invited lecture at Core Course of the European Joint Doctorate on Theoretical Chemistry and Computational Modelling , Madrid, Spain
- 23/09/2015: HPC as a key-enabling technology, keynote speech at SOR15, Bled, Slovenja
- 16/07/2015: MHPC: an opportunity to create a new class of HPC professionals between Europe and Latin America, invited talk at Workshop on HPC Collaboration between Europe and Latin-America, at ISC2015, Frankfurt, Germany
- 27/05/2015: Establishing HPC computational environments in industry: a view from inside invited talk at PraceDay2015, Dublin, Ireland
- 22/05/2013: e-infrastructure Requirements and Needs for Nano foundries and Fine Analysis (NFFA) scientific community, invited talk at the e-IRG workshop, Dublin, Ireland
- 28/08/2012: Which computational infrastructure for Climate Simulation ?, invited talk at the ECSAC12 conference, Veli Losinj, Croatia

Role in scientific
projects at national and
international level

title of the project: **PRP@CERIC-ERIC**
duration: 30 months (01/12/2022 -31/05/2025)
amount of grant: 40.966.000 Euro
funding agency: PNRR funds (MUR)
role in the project: Proposal coordinator and Scientific Coordinator.

title of the project: **NFFA-DI**
duration: 30 months (01/01/2023 -30/06/2025)
amount of grant: 33,999,999 Euro
funding agency: PNRR funds (MUR)
role in the project: Proposal writer and AreaSciencePark Scientific Coordinator.

title of the project: **BOL - BIO Open Lab**
duration: 38 months (01/08/2019 -30/09/2023)
amount of grant: 12.434.500,00
funding agency: Programma Obiettivo Nazionale (MUR)
role in the project: Scientific Coordinator.

title of the project: **Il Progetto di rafforzamento del capitale umano CIR01_00032 – BOL “BIO Open Lab - Rafforzamento del capitale umano”**
duration: 36 months (16/11/2020 -15/11/2023)
amount of grant: 1.963.575,20
funding agency: Programma Obiettivo Nazionale (MUR)
role in the project: Proposal co-writer and Scientific Coordinator.

title of the project: **EOSC-Pillar (<https://www.eosc-pillar.eu/>)**
duration: 36 months (01/07/2019 -30/06/2021)
amount of grant: 354,000 CNR contribution
funding agency: European Project (H2020 Program)
role in the project: proposal co-writer and task 6.1 coordinator

title of the project: **NFFA-EUROPE PILOT (<https://www.nffa.eu/>)**
duration: 60 months (01/03//2021 -28/02/06/2026)
amount of grant: 16 MEuro
funding agency: European Project (H2020 Program)
role in the project: proposal co-writer and external consultant on data management

title of the project: **NFFA-EUROPE (<https://www.nffa.eu/>)**
duration: 60 months (01/07/2019 -30/06/2021)
amount of grant: 255,000 (CNR/IOM -JRA3 contribution)
funding agency: European Project (H2020 Program)
role in the project: proposal co-writer and JRA3 (Data-Management for Nanoscience) coordinator

title of the project: **EUSMI (<https://eusmi-h2020.eu/>)**
duration: 48 months (01/07/2017 -30/06/2021)
amount of grant: 255,375.00 (CNR/IOM contribution; eXact lab srl)
funding agency: European Project (H2020 Program)
role in the project: proposal co-writer and JRA10 (Data-Management for Soft Matter) coordinator, member of the Executive committee.

title of the project: **ARES - Against bRain cancEr: finding personalized therapies with in Silico and in vitro strategies project** (<http://www.ares-project.it/>)

duration: 30 months (15/09/2018 -14/03/2021)

amount of grant: 162.930,23 € (eXact lab srl contribution);

funding agency: funded by FVG region: POR FESR 2014 – 2020 (2018-2021)

role in the project: coordinator and project manager of the whole project.

title of the project: **EXANEST** <http://www.exanest.eu/>

duration: 42 months (01/12/15-31/05/2019)

amount of grant: 220.000,00 € (eXact lab srl contribution);

funding agency: European Project (H2020 Program)

role in the project: coordinator of the eXact lab activities within the project

title of the project: **OpenViewSHIP**

duration: 36 months (01/03/14-28/02/2017)

amount of grant: 55.000,00 € (eXact lab srl contribution);

funding agency: funded by FVG region (2014-2017)

role in the project: coordinator and project manager and project manager of the whole project

title of the project: **ICTP EU-FP7 EU-IndiaGrid2 project:**

duration: 2 years (01/01/2010-31/12/2011)

amount of grant: 125000 Euro (ICTP contribution)

funding agency: European Union (FP7 project)

role in the project: member of the editorial team for the proposal and technical manager.

title of the project: **ICTP EGRID project: setup up an e-infrastructure for finance research**

duration: 40 months (01/2004 – 04/2007)

amount of grant: 900000 euro

funding agency: Italian Ministry for University and Research

role in the project: technical co-manager (together with A. Nobile)

Activities and Roles at international level

01/07/2019 – 31/12/2020 : Italian representative of the European FAIR working group (see <https://www.eoscsecretariat.eu/working-groups/fair-working-group>)

Member of the Program Committee for:

- Conferencia Latino Americana de Computación de Alto Rendimiento (2007/2009/2010/2011/2013/2014/2015/2017/2018/2019)
- WOPSS conference (2016/2017/2018/2019)
- Linux Cluster Revolution conference (from 2002 -2011)
- International Conference on Computational Science and It Applications (/2010/2011/2012/2013)

Referee for Journal of Grid Computing and for several other conferences and journal in HPC/GRID.

Selected Scientific program activities co-organized and co-directed

2012/12 - UNDP-AAP "Training and Installation Workshop for Climate Information Center" - University of Mauritius, Port Louis, Mauritius

2012/2 ICTP Advanced School on Scientific Software Development: Concepts and Tools, ICTP Trieste 20 February, March 2 2012

2011/05 ICTP Conference on the role of e-infrastructure for climate Change, 16-20 May 2011, Trieste Italy (smr2238)

2009/06 - LATHPCG: Joint ICTP/UPB/UDEA "Latinamerican Tutorial in High Performance and Grid Computing" - UPB, Medellin, Colombia
[http://cdsagenda5.ictp.trieste.it/full_display.php?ida=a08194]

2009/01 ICTP Latin American School on Computational Materials Science, 19 - 30 January 2009, Santiago – Chile. (smr2071)

2008/09 Joint EU-IndiaGRID/CompChem GRID Tutorial on chemical and material science applications, 15-18 September 2008, Trieste Italy. (smr2095)

2007/12 - "Joint eLAB/SISSA and ICTP Special Training Programme for High Performance Computing toward African Universities"

2007/03 joint DEMOCRITOS/INFM-eLab/SISSA-ICTP Advanced School in High Performance Computing Tools for e-Science, 5-16 march 2007, Trieste - Italy. (smr1830)

2005/01 ICTP Regional School on LINUX Clusters for High Performance Computing, January 2005 Kumasi –Ghana (smr1640)

2003/11 Regional School in High Performance Computing on Linux Clusters (Merida, Venezuela) 27/10/2003 - 07/11/2003 (smr 1525)

2002/02 Joint ICTP-INFM school in "High Performance Computing on Linux Clusters . 31/01 - 15/02/2002 (smr 1395)

Trieste, May 2024

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