PERSONAL INFORMATION

MARCO CHIARELLI

📍 Via Cavour, 14, 73024 MAGLIE (LE)

📍 P.zza Bachelet, 73024 MAGLIE (LE)

📞 0836483606   📞 0836485050

📱 +393881020630

✉ marco_chiarelli@yahoo.it

Gender Male | Date of birth Dec 14 1993 | Nationality Italy

PREFERRED JOB

Scientific researcher

WORK EXPERIENCE

Feb 2022 - Mar 2022

Fixed Term Employment

Development of a neural network based speech identification system suited for investigative and forensic applications.

Dipartimento di Studi Umanistici - Università del Salento - LECCE (LE) Italy

Business or sector education, training, research and development

Mar 2018 - Nov 2019

Research Collaborator at the Advanced Scientific Computing (ASC) division

The research activities carried out at the Advanced Scientific Computing (ASC) division of the Euro-Mediterranean Center on Climate Change (CMCC), concern:

- Climate models optimization, in particular the NEMO ocean model (Nucleus for European Modelling of the Ocean). For this optimization, sequential analysis of the code and advanced techniques (for memory-bounded kernels) have been successfully applied, improving the NEMO performance;
- High Performance Data Analytics (HPDA). In particular, analysis and optimization of the Ophidia data analytics framework: http://ophidia.cmcc.it/ ;
- Investigation into the use of Neural Networks as a tool for climate and weather forecasts and their use in NEMO, downscaling models etc. Knowledge of the main framework, architectures and tools for Deep Learning.

CMCC (Centro Euro-Mediterraneo sui Cambiamenti Climatici) , Augusto Imperatore - LECCE (LE) Italy

Mar 2018 - Jun 2019

Teaching Assistant on HPC - High Performance Computing

Teaching Assistant in the High Performance Computing (HPC) Master's degree course in Computer Engineering at the University of Salento, Italy.

Covered topics:

- Modern Processors & Cache architectures;
- Profiling tools;
- Roofline model;
- Optimization techniques and tools.

Università del Salento - MONTERONI DI LECCE (LE) Italy

Business or sector Engineering and design , computer science, data processing and acquisition

Oct 2017 - Jan 2018

Undergraduate Internship

CMCC - Centro Euromediterraneo per i Cambiamenti Climatici , Augusto Imperatore,16 - LECCE (LE) Italy

Business or sector Engineering and design , computer science, data processing and acquisition

EDUCATION AND TRAINING

2019 - 2023

Scuola di Dottorato dell'Universita' del Salento Scienze e Tecnologie Biologiche ed Ambientali   EQF level 8

Università del SALENTO

Doctor of Philosophy (Ph.D.)

Principal subjects/occupational skills covered:

Use of Machine Learning / Deep Learning techniques for Climate Change applications. In particular these techniques are currently applied to the following use cases:

- Time series analysis and prediction (Sea Level Forecast);
- Downscaling;
- Hybrid Modelling;
- Tropical cyclones prediction;
- Extreme Weather Events.

2022 - 2022	Visiting Scientist	EQF level 7

Columbia University in the City of New York - Earth and Environmental Engineering
2nd cycle degree - Master

2015 - 2018	COMPUTER ENGINEERING	EQF level 7

Università del SALENTO - Department of Engineering Innovation
2nd cycle degree/Master of Science (2 years)

2012 - 2015	INGEGNERIA DELL'INFORMAZIONE	EQF level 6

Università del SALENTO - Department of Engineering Innovation
1st cycle degree/Bachelor (3 years)

Postgraduate studies

OTHER TRAINING COURSE
2020
Abilitazione all'esercizio della Professione di Ingegnere
Università del SALENTO
Description: Qualification to practice as a Computer Engineer. Obtained in Università del Salento in collaboration with Ordine degli Ingegneri di Lecce.

PERSONAL SKILLS

Foreign language(s)

	UNDERSTANDING				SPEAKING				WRITING	
	Listening		Reading		Spoken interaction		Spoken production			
English	B2	Independent	C2	Proficient	B2	Independent	B2	Independent	C2	Proficient
French	A1	Basic	A1	Basic	A1	Basic	A1	Basic	A1	Basic

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user
Common European Framework of Reference for Languages

Communication skills

Very flexible and able to adapt into new social contexts, even if these are different from his standard. Much team spirit and after a warm-up period, very communicative and so excited about working with other people in a collaborative way.

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

Basic digital competence: Operating systems (Excellent), Programming languages (Excellent), Word processing (Good), Electronic spreadsheet (Good), Data base administrators (Excellent), CAD skills (Limited), Internet skills (Excellent), Data transmission networks (Good), Web-site creation (Fair), Multimedia (Fair),
Programming languages known: (C, C++, C#, Fortran, Java, Python, LUA, Bash)
Software applications: (Operating systems: Microsoft Windows, Ubuntu Linux, Linux CentOS, Mac OS, Linux FreeBSD
Programming scientific tools: TensorFlow, Keras, MATLAB, ROS, Simulink, TEXMaker, GNU Compilers (GCC, gfortran), Intel Compilers, LSF scheduling system
Productivity: Microsoft Word, Microsoft Excel, Microsoft Access, Microsoft PowerPoint.)

Driving licence

B

PUBLICATIONS

Journal articles

"An Artificial Neural Network-Based Approach for Predicting the COVID-19 Daily Effective Reproduction Number Rt in Italy" ; Andrea Gatto, Valeria Aloisi, Gabriele Accarino, Francesco Immorlano, Marco Chiarelli, Giovanni Aloisio ; MDPI AI - Artificial Intelligence ; MDPI (2022)
doi.org/10.3390/ai3010009

"MSG-GAN-SD: A Multi-Scale Gradients GAN for Statistical Downscaling of 2-Meter Temperature over the EURO-CORDEX Domain" ; Gabriele Accarino, Marco Chiarelli, Francesco Immorlano, Valeria Aloisi, Andrea Gatto, Giovanni Aloisio ; MDPI AI - Artificial Intelligence ; MDPI (2021)
doi.org/10.3390/ai2040036

"A multi-model architecture based on Long Short-Term Memory neural networks for multi-step sea level forecasting" ; Gabriele Accarino, Marco Chiarelli, Sandro Fiore, Giovanni Aloisio ; Future Generation Computer Systems ; Elsevier (2021)
doi.org/10.1016/j.future.2021.05.008

Degree thesis

"Advanced approaches to improve performance of numerical models on new HPC systems" ; Marco Chiarelli ; Università del Salento (2018)

"Analisi in Componenti Principali e Proprietà Strutturali dei Sistemi Lineari" ; Marco Chiarelli ; Università del Salento (2015)