Curriculum Vitae

| PERSONAL INFORMATION | **Michele de Rosa** |
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🌐 www.mondometeo.org

💬 Skype mic_der

Sex Male | Date of birth 16/6/1974 | Nationality Italian

| POSITION | System engineer-Researcher/Software engineer on meteorological systems |
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## WORK EXPERIENCE

**8/4/2013–Present**

### System analyst of meterological systems

Geo-K S.r.l., Rome (Italy)

The main covered activities involve the design and realization of a meteorological system for the short term forecast of the thunderstorms using the satellite Meteosat Second Generation data. The system is developed together with the Italian Meteorological Office, which is the final customer. I am the project manager and I manage a small team composed by some PhD and degree students. I'm trying to apply some useful software development technique. Moreover I'm involved into the monitoring, setup and maintenance of the process chains for the HSAF project at the Italian Air force Meteorological office.

As mobile developer, I'm involved into the realization of an app based on a proprietary nowcasting engine.

The app named InstantWeather has been published on 5th September 2014 on the Playstore.

Business or sector Professional, scientific and technical activities

**10/6/2002–5/4/2013**

### System Engineer

T.R.S. S.p.A.
via della Bufalotta,378, 00139 Rome (Italy)

For the first 5 years I was analyst programmer and I worked for the Flight Data Processor (FDP) project. For this project I designed and developed an MFC library emulator under Unix/Linux written in C++.

In the next 3 years I have covered the following positions: requirements analyst and system designer for air traffic control and defense systems. I worked for the European Union Command and Control Information System (EUCCIS) project, leading a team of up to 15 people. On defense systems, I was part of the NATO's Multilateral Interoperability Program (MIP) for the interoperability of the Command and Control defense systems and he designed and developed the Data Exchange Mechanism (DEM) DB-to-DB replicator, written in Java. From 2007 I participated to several international MIP meetings in Germany and Norway. The security clearance was needed by the projects.

From Sept to Dec 2010 I started to develop a new system for the visibility estimation using a commercial camera.

From Jan 2011 to Feb 2012 I worked for the design and development of a DB to DB replicator in the MIP context and I was the Project Manager. The project followed a test driven development process.

The last project, I was involved, was about the development of a nowcasting system, based on my PhD thesis, and its integration with an augmented reality engine.

Business or sector Civil, defense and weather systems

**20/10/2007–1/2/2011**   ## Researcher

"Sapienza" University
via eudossiana,18, Rome (Italy)

Development and implementation of a model for the rainfall nowcasting based on the Meteosat IR images using an Ensemble of Neural Networks for his PhD thesis. The model uses a new ensemble approach named DAN (Dynamically Averaging Networks) in order to adapt the ensemble weights. The ensemble output is a short term prediction of the MSG IR images. Some neural models were developed in order to produce meteorological products like Cloud Mask (CM), Multi-sensor Precipitation Estimate (MPE) and Land Surface Temperature (LST). These models were applied to the estimated IR images in order to give the short term prediction of the CM, MPE and LST.

Business or sector Research

**1/5/2001–1/5/2002**   ## Researcher

National Institute of Nuclear Physics, Naples (Italy)

Analysis, design and implementation of parallel algorithms for signal processing using MPI.

Business or sector Research

## EDUCATION AND TRAINING

**1/11/2008–1/2/2011**   ## Environmental Monitoring PhD

"Sapienza" University
via eudossiana,18, Rome (Italy)

Develop of a new model based upon the Meteosat IR images to nowcast extreme meteorological events.

Title of the PhD thesis:"Ensemble Bayesian approach for nowcasting of Geostationary Multispectral Imagery for Hydro-Meteorological Applications".

**1/10/1993–29/3/2001**   ## Degree in Computer Science

University of Salerno, Salerno (Italy)

Degree in Computer Science with 109/110.

Title of the thesis:"Rivelazione di segnali gravitazionali con architetture parallele".

The thesis was developed at the VIRGO project for the detection of the gravitational waves.

## PERSONAL SKILLS

**Mother tongue(s)**   Italian

**Other language(s)**

| UNDERSTANDING | | SPEAKING | | WRITING |
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| Listening | Reading | Spoken interaction | Spoken production | |
| B1 | B2 | B1 | B1 | C1 |

English

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

**Communication skills**   Team spirit.

Great ability to work into a multicultural environment.

Great capacity to solve technical and oganizational problems.

Papers' Reviewer for the Elsevier Remore Sensing Review.

Supervisor for Electronics Engineering's and Computer Science's degree students.

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| **Organisational / managerial skills** | Team leader and team manager of up to 15 people. |
| | Very good experience in team management. |
| | Very good experience in project management. |
| | Technical recruiter. |

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| **Job-related skills** | Very good knowledge of the Object Oriented paradigm using design patterns and UML design paradigm. |
| | Very good knowledge of the standard MIL 498. |
| | Very good knowledge of the neural models and the machine learning in general. |
| | Very good knowledge of the Polarion sw for the Project Management. |
| | Good knowledge of the Agile Development. |
| | Good knowledge of the continuous integration approach. |
| | Good knowledge of the remote sensing in the field of the meteorology. |

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| **Computer skills** | Very good knowledge of the following operating system: Linux (OpenSuse distribution), Windows XP, Unix Tru64. |
| | Good knowledge of the Android OS. |
| | Very good knowledge of the following languages: C, C++, Java (J2SE), Matlab,. |
| | Very good knowledge of the Standard Template Library and the pthread library. |
| | Good knowledge of the MFC library. |
| | Good knowledge of the following languages: PL/SQL and Javascript. |
| | Very good knowledge of the following DBMS: Orable 10g, Oracle 11g, MySQL. |
| | Good knowledge of the MS Office suite. |
| | Very good knowledge of the following IDE: Eclipse, Net Beans, Titanium Studio. |
| | Good knowledge of the unit tests tools (JUnit, UtPlSql) |
| | Very good knowledge of software versioning (CVS, SVN, GIT). |
| | Very good knowledge of virtualization tools like ESXi, vShere |
| | Good knowledge of shell scripting (sh,ksh). |
| | Good knowledge of the Message Parsing Interface (MPI) standard for parallel computing. |
| | Good knowledge of the KML, HDF5 and JSON formats. |
| | Good knowledge of the ECFlow scheduler framework. |
| | Good knowledge of the RESTful pattern for the web services develpment. |
| | Knowledge of PHP and HTML. |

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| **Other skills** | Music, Tennis, Cooking and Rugby |

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| **Driving licence** | B |

## ADDITIONAL INFORMATION

Great passionate of meteorology.
I designed and developed a Java application in order to translate his own weather forecasts into KMZ format.
These forecasts are built using the nowcasting model developed during the PhD thesis.The forecasts in KMZ format are published on the website www.mondometeo.org

On 5th September 2014 I published on the Playstore an app named InstantWeather based on my PhD studies.

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| **Conferences** | ▪ Eumetsat Conference 2014 - Geneva - Swiss 22-26 September 2014. Two Oral Presentations. |
| | ▪ Eumetsat Conference 2013 - Vienna - Austria 16-20 September 2013. Oral Presentation. |

- Sea Conference 2013 - Boulder(CO) - USA 1-4 April 2013. Oral presentation.
- Eumetsat Conference 2010 - Cordoba - Spain. Poster Session.RMets Conference 2011 - Exeter - UK. Oral Presentation.
- EGU2009 - Vienna - Austria 19-24 April 2009. Poster Session.
- "MW Remote Sensing" Conference promoted by AIT/CeTeM/MECSA - Rome - Italy 23-24 October 2008.
- Gold Conference 2008 - Frascati - Italy 22-23 May 2008.
- RMets Conference 2005 - Exeter - UK- Poster session.

**Publications**

- D. Melfi , D. Biron , A. Vocino , F. Zauli , M. Sist , M. de Rosa , M. Picchiani , L. De Leonibus "H-SAF FUTURE DEVELOPMENTS ON CONVECTIVE PRECIPITATION RETRIEVAL", 2014, Proceedings of the Eumetsat Conference 2014
- M. de Rosa , M. Picchiani , Massimiliano Sist , F. Del Frate , Frank Silvio Marzano "INTEGRATION OF A NOWCASTING MODEL BASED ON THE METEOSAT SECOND GENERATION SATELLITE WITH THE NOWCASTING SAF FRAMEWORK", 2014, Proceedings of the Eumetsat Conference 2014
- G. Iannitto, F. Del Frate, M. de Rosa "ON THE POTENTIAL OF BIG DATA CAPABILITIES FOR THE VALIDATION OF A WEATHER FORECASTING SYSTEM", 2014, Proceedings of the BIDS conference 2014 pp.342-345
- M. de Rosa et al.: "Reti neurali in meteorologia: un'applicazione su dati della regione Lombardia",2005, Rivista di Meteorologia Aeronautica, n. 3/2005, pp.34-40.
- G. Rivolta, M. de Rosa , F.S. Marzano. Precipitation Nowcasting from Geostationary Satellite Platforms: Neural Networks approach trained by Polar Orbiting and Ground based data. Italian Review of Remote Sensing, ISSN: 1129-8596.
- M. de Rosa, G. Rivolta, F.S. Marzano, A. Eleuteri. Ensemble Bayesian neural nowcasting of geostationary multispectral imagery for hydro-meteorological applications. Proceedings of the EUMETSAT Conference 2010 - EUMETSAT P.57, ISBN 978-92-9110-089-7, ISSN 1011-3932.
- F.Acernese, F.Barone, M.De Rosa, R.De Rosa, A.Eleuteri, L.Milano, R.Tagliaferri A neural network-based approach to noise identification of interferometric GW antennas: the case of the 40m Caltech laser interferometer. Class. Quantum Grav. 19 (2002) 3293–3307 F.Barone, M.De Rosa, R.De Rosa, A.Eleuteri, R.Esposito, P.Mastroserio, L.Milano, F.Taurino, G.Tortone
- Evaluation of Mosix-Linux Farm performances in GRID environment. Proceedings of CHEP 2001 pp. 702-703

**Seminars**

"Ensemble Nowcasting of Geostationary Multispectral Imagery for Hydro-Meteorological Applications using Bayesian Neural Networks" at University of Colorado UCAR/NCAR on 8th March 2012

**Memberships**

- Member of the Royal Meteorological Society.
- Member of the Italian Remote Sensing Society (AIT).

**Honours and awards**

- Certificate of Participation at the Eumetsat Summer school 2013
- Certification of Attendance at the Eumetsat Conference 2014
- Certification of Attendance at the ESA Copernicus Appathon 2015

**Privacy**

I authorize to handle my personal data pursuant to the Italian Personal Data Protection Code (D.Lgs no. 196/2003)