Mario Papa

ABOUT ME

I'm an aerospace engineer with several years of experienxe in research and industry. My fields of work are earth observation, remote sensing and artificial intelligence. I also have experience in managing national and international projects.

WORK EXPERIENCE

01/07/2023 – CURRENT Rome, Italy
EARTH OBSERVATION ENGINEER GEO-K S.R.L.

- project managar of national and international projects
- machine learning approaches
- development new algorithms and products from satellite data

01/11/2020 – 31/10/2022 Rome, Italy
POSTDOCTORAL FELLOWSHIP UNIVERSITY OF ROME "LA SAPIENZA"

The research activity regards:
- Simulation radiometric images with radiative transfer models
- Study of geophysical model function to create the complete Stokes vector for sea surface brightness temperature
- Development methology to monitoring micro-climate conditions in the museum areas
- Partecipation in national and international scientific conferences
- Publishing scientific results in the peer-reviewed literature

Projects:
- Partecipation in the MCASys project, as project manager, for the development a methodology to prevent risks (dangerous values of humidity, temperature, particle matter, ecc..) in the museum areas.
- Partecipation in the CIMR (Copernicus Imaging Microwave Radiometer) project, as responsible for work package to support EO scene generator, in collaboration with CRAS (Sapienza Aerospace Research Center) and TASI (Thales Alenia Space Italy) and
- Partecipation in the SMIVIA project ("Snow-mantle Modeling, Inversion and Validation using multi-frequency multimission InSAR in central Appennino"), to support the classification and simulations of snowpack in collaboration with ASI (Italian Space Agency)

Scientific responsable of the fellowship: Prof. Frank Silvio Marzano

01/03/2022 – 30/11/2022 Rome, Italy
ENGINEERING COLLABORATION UNIVERSITY OF ROME "LA SAPIENZA"

Air4Sap Project: Design and implementation of a network of environmental sensors for monitoring air quality in the "Basilica di San Pietro in Vincoli" in Rome. The sensors provides measurements near the sculpture "Mosè di Michelangelo" and the seventeenth-century wooden organ.Air4Sap Project: Design and implementation of a network of environmental sensors for monitoring air quality in the "Basilica di San Pietro in Vincoli" in Rome. The sensors provides measurements near the sculpture "Mosè di Michelangelo" and the seventeenth-century wooden organ.

01/02/2018 – 30/04/2019 Ceccano (FR), Italy
SOFTWARE DEVELOPER ERGONOTEC S.R.L.

Home working regarding:
- software development (php, mysql database, python, IoT, Arduino)
- android app development (AppInventor)
- web site maintenance (Wordpress)

01/10/2018 – 30/05/2019 Ferentino (FR), Italy
SECONDARY SCHOOL TEACHER ITIS DON G. MOROSINI

Teacher of industrial drawing, aerodynamics and structure of the aircraft (aviation sector)

17/06/2018 – 07/09/2018 Darmstadt, Germany
VISITING SCIENTIST EUMETSAT

Software development for geolocation of LEO satellite data from next-generation millimeter-wave radiometers (ICI: Ice Cloud Imager).

Website https://www.eumetsat.int/visiting-scientist-papa

01/12/2015 – 30/09/2017 Pratica di Mare (Rome), Italy
SYSTEM ANALYST EUMETNET/GEO-K

SRNWP-EPS II EUMETNET Fellowship:
  • Collaboration with Italian Air Force at Mario De Bernardi Airport (Pratica di Mare, Rome, Italy) in order to develop software for weather hazards, like thunderstorm and fog.
  • Use supercomputer, Fortran and C++
  • manage output of several numerical weather model in netCDF and GRIB format
  • Maintenance of operational code

01/06/2015 – 30/11/2015 Capua, Italy
RESEARCHER EURO-MEDITERRANEAN CENTER ON CLIMATE CHANGE (CMCC)

- Software development for weather alerts in the cockpit of aircraft.
- Use of supercomputer and use of the dynamic model for weather forecast (COSMO-LM). Participation in the COSMO general meeting in 2015 in Wroclaw (Poland).
- Project Wat-Ener-Cast: software development for weather forecasts with statistical downscaling.
- Some experiences in the wind tunnel of the Italian Aerospace Research Center performed with PIV (Particle Imagery Velocimety).

09/2014 – 05/2015 Capua, Italy
INTERNSHIP ITALIAN AEROSPACE RESEARCH CENTER

During the internship I did a thesis on airborne weather radar developing a simulator for weather radar signal and weather radar imagery.

EDUCATION AND TRAINING

01/10/2017 – 31/10/2020 Rome, Italy
PHD University of Rome "Sapienza"

PhD in INFORMATION AND COMMUNICATIONS TECHNOLOGIES (ICT).
  • Geolocating Low-Earth-Orbit satellite data from next-generation millimeter-wave radiometers using natural targets.
  • Numerical simulation of radiometric imagery using radiative transfer models
  • Partecipation to EUMETSAT project "GAMES": https://www.eumetsat.int/games

Tutor for the research activities: Prof. Frank Silvio Marzano

Level in EQF EQF level 8 |

Thesis Geolocating Low-Earth-Orbit satellite data from next-generation millimeter-wave radiometers using natural targets.

Link https://phd.uniroma1.it/web/PAPA-MARIO_nP1328283.aspx

03/2007 – CURRENT
LICENSE FOR FLY WITH ULTRALIGHT POWERED AIRCRAFT (VDS LICENSE).

09/2012 – 05/2015 Rome, Italy
MASTER COURSE IN AERONAUTICAL ENGINEERING University of Rome "Sapienza"

Thesis advisor: Prof. Tullio Bucciarelli (University of Rome "La Sapienza")
Thesis co-advisor: Prof. Frank Silvio Marzano (University of Rome "La Sapienza")
Thesis co-advisor: Paola Mercogliano (Euro-Mediterranean Centre on Climate Change and Italian Aerospace Research Center)

The main goal of the thesis was to develop an automatic algorithm to avoid area with dangerous weather condition for autonomous flight using the output of COSMO weather model.

Final grade 110/110 | **Level in EQF** EQF level 7 |

Thesis Airborne X-band weather radar for autonomous safe flight: system analysis and numerical simulation

09/2009 – 10/2012 Rome, Italy
BACHELOR'S DEGREE IN AEROSPACE ENGINEERING University of Rome "Sapienza"

Level in EQF EQF level 6 | **Thesis** Final mark: 110/110 cum Laude

09/2004 – 07/2009 Ferentino, Italy
TECHNICAL DIPLOMA IN AERONAUTICAL CONSTRUCTION Industrial and technical institute Don G. Morosini

Final mark: 100/100 cum Laude
Experience with lathe and milling machine and basic knowledge of computer numerical control (CNC) machines (scholastic knowledge).

Level in EQF EQF level 4

LANGUAGE SKILLS

Mother tongue(s):   **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

MATLAB&Simulink | FORTRAN 77/90/95 | Python(Basic) | MS Office (World Excel Power Point Access) | Revit / Fusion 360 | OnShape | Autocad | SQL/MYSQL | PHP, SQL (basic level)

ADDITIONAL INFORMATION

PUBLICATIONS

Study of the Intense Meteorological Event Occurred in September 2022 over the Marche Region with WRF Model: Impact of Lightning Data Assimilation on Rainfall and Lightning Prediction
– 2023
R.C. Torcasio, M. Papa, F. Del Frate, S. Dietrich, F.E. Toffah, S. Federico

Volcanic Cloud Detection and Retrieval Using Satellite Multisensor Observations – 2023

F. Romeo, L. Mereu, S. Scollo, M. Papa, S. Corradini, L. Merucci, F.S. Marzano

https://www.mdpi.com/2072-4292/15/4/888

Geolocation Assessment/validation Methods for EUMETSAT Polar System–Second Generation (EPS-SG) ICI conical scanning radiometer

2023 17th European Conference on Antennas and Propagation (EuCAP)
F.S. Marzano, V. Mattioli, C. Accadia, F. De Angelis, M. Papa, D. Casella, G. Panegrossi, P. Sanò, M. Montopoli, B. Rydberg

Neural-network parametric modeling of ocean surface brightness temperature polarimetric observations for Sentinel Copernicus Imaging Microwave Radiometer

– 2022
E. Gugliandolo, M. Papa, N. Pierdicca, and F. S. Marzano
https://doi.org/10.5194/egusphere-egu22-12052

Can We Use Atmospheric Targets for Geolocating Spaceborne Millimeter-Wave Ice Cloud Imager (ICI) Acquisitions?

– 2022
D.Casella, G. Panegrossi, P. Sano, B. Rydberg, V. Mattioli, C. Accadia, M. Papa, F. S. Marzano, M. Montopoli
DOI: 10.1109/TGRS.2022.3145638

IEEE Transactions on Geoscience and Remote Sensing (Volume: 60)

Snow measurement campaign for snowpack model and satellite retrieval validation in Italian Central Apennines within SMIVIA project

– 2022
E.Raparelli, P. Tuccella, A. Lombardi, G. Palermo, N. A. Romero, M. Papa, E. Picciotti, S. Di Fabio, E. Pettinelli, E. Mattei, S. Lauro, B. Cosciotti, C. Petroselli, D. Cappelletti, M. Pecci, F.S. Marzano

EGU22-12082

Volcanic cloud satellite retrieval: an infrared and millimeter-wave multisensor approach using statistical and machine learning methods

– 2022
F. Romeo, L. Mereu, S. Scollo, M. Papa, S. Corradini, L. Merucci, F. S. Marzano

EGU22-10650

Coastal Water Quality: Hydrometeorological Impact of River Overflow and High-resolution Mapping from Sentinel-2 Satellite

– 2022
A. Lombardi, M. P. Manzi, F. Di Giacinto, V. Colaiuda, B. Tomassetti, M. Papa, C. Ippoliti, C. Giansante, N. Ferri and F. S. Marzano
DOI: 10.5772/intechopen.104524

Snow-Mantle Remote Sensing from Spaceborne Sar Interferometry Using a Model-Based Synergetic Retrieval Approach in Central Apennines

– 2022
IGARSS 2022-2022 IEEE International Geoscience and Remote Sensing Symposium
G Palermo, E Raparelli, N Alvan Romero, MP Manzi, M Papa, M Biscarini, P Tuccclla, A Lombardi, V Colaiuda, B Tomassetti, D Cimini, E Pettinelli, E Mattei, S Lauro, B Cosciotti, E Picciotti, S Di Fabio, L Bernardini, G Cinque, DM Cappelletti, C Petroselli, Mt Pecci, P D'Aquila, M Martinelli, T Caira, T Di Fiore, P Boccabella, FS Marzano
DOI: 10.1109/IGARSS46834.2022.9884911

Differential SAR interferometry for estimating snow water equivalent in central Apennines complex orography from Sentinel-1 satellite within SMIVIA project

– 2022
G. Palermo, E. Raparelli, N. A. Romero, M. Papa, M. Orlandi, P. Tuccella, A. Lombardi, E. Picciotti, S. Di Fabio, E. Pettinelli, E.Mattei, S. Lauro, B. Cosciotti, D. Cappelletti, M. Pecci, F. S. Marzano

EGU22-10149

[Designing a Mouse-Antenna Sun-Tracking Radiometer at 89 GHZ for Atmospheric Emission and Extinction Monitoring](#)

– 2022
IGARSS 2022-2022 IEEE International Geoscience and Remote Sensing Symposium
F. Consalvi; L. Amaduzzi; N. Lovecchio; M. Papa; S. Barbieri; M. Biscarini; G. Fusco; F.S. Marzano

[Investigating Spaceborne Millimeter-Wave Ice Cloud Imager Geolocation Using Landmark Targets and Frequency-Scaling Approach](#)

– 2021
M Papa, V Mattioli, M Montopoli, D Casella, B Rydberg, FS Marzano
DOI: [10.1109/TGRS.2021.3091831](#)

IEEE Transactions on Geoscience and Remote Sensing (Vol:60)

[Assessing the Spaceborne 183.31-GHz Radiometric Channel Geolocation Using High-Altitude Lakes, Ice Shelves, and SAR Imagery](#)

– 2020
M. Papa, V. Mattioli, J. Avbelj, F. S. Marzano
DOI: [10.1109/TGRS.2020.3024677](#)

IEEE Transactions on Geoscience and Remote Sensing 59 (5), 4044-4061

[Geocalibrating Millimeter-wave Spaceborne Radiometers for Global-scale Cloud Retrieval](#)
M Papa, V Mattioli, J Avbelj, FS Marzano
DOI: [10.1109/PIERS-Spring46901.2019.9017272](#)

2019 PhotonIcs & Electromagnetics Research Symposium - Spring (PIERS-Spring): 17-20 June 2019

[SRNWP-EPS post-processing tool for high-impact weather forecasting: application to COSMO model](#) –
2019
F. Marcucci, L. Torrisi, R. Golino, M. Papa

Poster in: EWGLAM and SRNWP meetings, Sofia 2019

[Airborne X-Band weather radar for autonomous safe flight: system analysis and numerical simulation](#)

– 2015
M. Papa, P. Mercogliano, F. S. Marzano, T. Bucciarelli, M. Montopoli

Poster in: 17th COSMO General Meeting, 7-10 September 2015, Wrocław (Poland)

DRIVING LICENCE

Driving Licence: A

Driving Licence: B

SOFT SKILLS

Soft Skills

Excellent ability to work in teams and to work independently;
Great work organization and compliance with deadlines and tasks;
Good problem solving skills and excellent interpersonal skills;
Desire to grow both professionally and personall

Labico (RM), 29/01/2024