



Simone Saquella

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Address:

WORK EXPERIENCE

31/05/2021 – CURRENT Rome, Italy

GRANT RESEARCHER - SPACE ENGINEER/SATELLITE IMAGE ANALYST UNIVERSITY "LA SAPIENZA", EOSIAL LAB (EARTH OBSERVATION SATELLITE IMAGES ANALYSIS LABORATORY)

- Grant researcher at **Earth Observation Satellite Images Applications Lab (EOSIAL)** of School of Aerospace Engineering, working on developing algorithms and software with Python and Matlab codes for Agricultural applications using remote sensing data: from image processing to the production of crop type maps, phenology monitoring and crop calendar maps, inversion of radiative transfer models, retrieval of biophysical parameters (leaf area index, moisture content) from optical satellite data (Sentinel-2 and PRISMA). Monitoring and Mapping in the framework of:
 - the european project Horizon 2020 "**AfriCultuReS**" (African Agriculture Remote Sensing), which includes 8 african states using high spatial resolution satellite images (Sentinel-2)
 - and in the framework of the "**Afri4cast**" project, which involves the eastern part of Africa, working in sinergy with AgroApps, using PRISMA, ECOSTRESS and SENTINEL data.
- Currently, also PhD student, since November 2022 at la Sapienza University, Energy and Environment (DIAEE department).

Research grants:

1. 2021-2022 "Development and validation of the high spatial resolution Africultures project EO products devoted to crop assessment and monitoring"
2. 2022-2023 "Validation and demonstration of the crop mapping related services for the Africultures EO project"

Ground survey to collect data for validation/calibration: Survey of biodiversity and tree species in Sardinia (April 2022), and experience using measurments with LAI2000 in the afri4cast project.

Academic experience: University lectures given for the course "Satellite Remote Sensing" by Prof. Laneve for the master's degree in "Aerospace Engineering", La Sapienza, and for the Link Campus University Master's Degree in "Environmental Security: innovative technologies, drones and geomatics for environmental and territorial protection - 5th edition" (Unit 5 - The COPERNICUS system for the use of satellite data).

EDUCATION AND TRAINING

08/2018 – 26/01/2021 Rome, Italy

MASTER'S DEGREE IN SPACE & ASTRONAUTICAL ENGINEERING University La Sapienza

Using COSMO SKY-MED SAR data and lidar data

Main topics: Radar image processing, Radar and optical sensors, Geodesy, GPS/GNSS, Space Flight Mechanics & Spacecraft Design.

Field of study Remote sensing and Earth Observation | **Final grade** 110/110 cum Laude |

Thesis Satellite and UAV remote sensing techniques for monitoring volcanic areas: Stromboli Island

08/2016 – 07/2018 Rome, Italy

DEGREE COURSE IN "PHILOSOPHY" Pontifical Gregorian University

Final grade Two years ended. Exam average: 28.7 |

Thesis The question of "Technology" in Bacon, Heidegger and San Bonaventura.

06/2018 Rome, Italy

"FINANCIAL EDUCATION" COURSE Profit Point

10/2014 – 11/2015 Rome, Italy

AERONAUTICAL ENGINEERING (1 YEAR) University La Sapienza

09/2011 – 11/2014 Rome, Italy

BACHELOR'S DEGREE IN AEROSPACE ENGINEERING La Sapienza University

Final grade 110/110 | **Thesis** "Performance analysis and use of hybrid propellant endoreactors for future launchers"

08/2006 – 07/2011 Rome, Italy

CLASSICAL HIGH SCHOOL DIPLOMA "Liceo Classico Statale Augusto"

Final grade 95/100

● **LANGUAGE SKILLS**

Mother tongue(s): **ITALIAN**

Other language(s):

| | UNDERSTANDING | | SPEAKING | | WRITING |
|----------------|---------------|---------|-------------------|--------------------|---------|
| | Listening | Reading | Spoken production | Spoken interaction | |
| ENGLISH | B2 | C1 | B2 | B2 | B2 |

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

● **DIGITAL SKILLS**

Python | Microsoft Office | Word, excel, power point | Matlab (good knowledge) | Overleaf & LaTeX

Softwares

Google Earth Engine | GDAL | ENVI (SARscape) | QGIS | ArcGIS | ENVI | CloudCompare | SNAP |
Frameworks & Libraries: OpenCV, Sci-kit learn, NumPy, Pandas, SciPy, Matplotlib. | Scikit-Image

● **OTHER SOFT SKILLS**

Communication and interpersonal skills

Excellent interpersonal skills in the workplace and in shared projects with other teams.

Excellent communication aimed at all age groups acquired in the experience of volunteering at the Institute of the Missionaries of the Precious Blood (C.PP.S, Rome, Italy) from 2014 to 2017.

Communication and team mentality gained through sport and team training (basketball).

Learning, Teaching skills

- Excellent learning skills, gained through the use of many softwares and coding languages, and activity in different areas of remote sensing, from the pre-processing to data analysis.
- Excellent teaching skills, gained through the assistance of coworkers, PhD students, supervising Master Thesis, university lessons at La Sapienza and Link Campus University of Rome, and assistance to the study of middle and high school students (Mathematics, Physics, Chemistry, Philosophy, Latin, Greek).

University team projects

"Radar Image Processing Laboratory" (2020): Creating Matlab code to process raw data and focus radar images.

"Spacecraft Design Laboratory" (2020): sizing and design of telecommunication system of a cubesat satellite.

"Space systems laboratory" (2019): Design of a mission for "space mining".

Sapienza Technology team (STT 2018/2019): participation in the "Auvsisuas" competition with construction of a small rover.

"Laboratory of "Rocket Engines" (2014): realization, construction and mission analysis of a small rocket.

● CONFERENCES AND SEMINARS

Pasadena, California, USA, 16 - 21 July, 2023.

IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium

IGARSS 2022 - 2022 IEEE International Geoscience and Remote Sensing Symposium

Kuala Lumpur, Malaysia, 17 - 22 July, 2022.

AARSE 2022 conference - African Association of Remote Sensing of the Environment

Kigali, Rwanda, 24 - 28 October 2022

Training certification: "Mapping Crops and their Biophysical Characteristics with Polarimetric SAR and Optical Remote Sensing"

Nasa - ARSET

17/01/2022 - 19/01/2022

<https://appliedsciences.nasa.gov/what-we-do/capacity-building/arset>

Training certification: "Using Earth Observations for Pre- and Post-Fire Monitoring" Nasa

Nasa - ARSET

17/01/2022 - 19/01/2022

<https://appliedsciences.nasa.gov/what-we-do/capacity-building/arset>

Training Certification: "Agricultural Crop Classification with Synthetic Aperture Radar and Optical Remote sensing"

Nasa - ARSET

08/2021 - 10/2021

<https://appliedsciences.nasa.gov/what-we-do/capacity-building/arset>

Training Course: "IMPACT and Google Earth Engine"

Dario Simonetti, JRC - X AIT International Conference - Italian Society of Remote Sensing

<https://sites.unica.it/ait2020/program/special-events/>

● PUBLICATIONS

2022

[A Cross-Correlation Phenology-Based Crop Fields Classification Using Sentinel-2 Time-Series](#)

[IGARSS 2022 - 2022 IEEE International Geoscience and Remote Sensing Symposium](#)

S. Saquella; G. Laneve; A. Ferrari

2022

[Sino-Eu Earth Observation Data to Support the Monitoring and Management of Agricultural Resources](#)

[IGARSS 2022 - 2022 IEEE International Geoscience and Remote Sensing Symposium](#)

G. Laneve; S. Saquella; W. Huang; R. Orsi

2023

[Detection of Irrigated and Rainfed Crops with Machine Learning Multivariate Time-Series Object-Based Classification Using Sentinel-2 Imagery](#)

[IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium](#)

S. Saquella; A. Ferrari; V. Pampanoni; G. Laneve

2023

[Testing a Novel Scalable-Resolution Fire Danger Index Based on Sentinel Imagery: The Montiferru Megafire Case-Study](#)

[IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium](#)

V. Pampanoni; G. Laneve; S. Saquella

● **DRIVING LICENCE**

Driving Licence: A2

Driving Licence: B

● **DRONE LICENSE**

A1-A3 Open Sub Category

● **TREATMENT OF PERSONAL DATA**

Treatment of personal data

I authorize the processing of personal data contained in my curriculum vitae based on art. 13 of Legislative Decree 196/2003 and art. 13 of EU Regulation 2016/679 concerning the protection of individuals with regard to the processing of personal data.

Roma, 02/08/2024