Valerio Pampanoni

Work Experience

Nov 2019-Current Jan 2019-Oct-2019	**PhD Candidate/Researcher** at La Sapienza University, Rome **Grant Researcher** at La Sapienza University, Rome Earth Observation Satellite Images Applications Lab (EOSIAL)

Fire Hazard Index Calculation from Satellite and Meteorological Data

I am using satellite remote sensing data, land use maps, fuel maps and meteorological data to determine daily fire hazard indices in the Italian region of Sardinia. The model takes into account daily changes in temperature, moisture and wind speed, and is written in Matlab to run autonomously on a server, using only the latest satellite images and meteorological data.

Land Erosion Vulnerability Assessment

I implemented the RUSLE (Revised Universal Soil Loss Equation) model in Matlab with the objective to assess the vulnerability to erosion of the Sardinian terrain and the potential for land loss, with particular focus on the areas recently stricken by fire. Using the latest Copernicus EU DEM and Corine Land Cover maps, I am validating different algorithms in order to maximise the reliability of the results.

Detection of Active Fires from Geostationary Orbit based on an improved SFIDE Algorithm

I am working with an improved version of the SFIDE *(Satellite FIre DEtection)* algorithm to monitor active wildfires in real time exploiting MSG data. The new version of the algorithm was largely modified in order to reduce false positives while preserving its high sensitivity, which is necessary to detect smaller fires from the Geostationary orbit.

Feasibility and Early Prototyping of a CubeSat Remote Sensing Mission in Martian Orbit

Building on the recent studies on Martian multi-sunsynchronous orbits and the results of my own Master's thesis, I'm performing radiation transfer simulations using MODTRAN and the Mars Climate Database in order to assess the feasibility of such a mission, employing both limblooking and downlooking observation techniques, and to define the requirements of early prototyping hardware.

Apr-Oct 2018	**Thesis Intern** at ENEA Casaccia Research Center, Rome Energetic Technologies Department, Laboratory for Energetic Engineering Processes and Systems

Calibration and Re-Purposing of the "F-RAD" UV Filter-Radiometer

After re-adapting and re-configuring ENEA's *F-RAD* UV Filter-Radiometer to acquire measurements in temperate climates, I performed a calibration using a *Spectral Irradiance* procedure, which involved the use of certified calibration lamps and simulation data that was obtained using TUV, an UV-specialized radiative transfer software. Finally, I acquired measurements for about a month and validated them using model and satellite data.

Publications, Conferences and Workshops

September 2019	*V. Pampanoni, R. Shaik* Daily Fire Hazard Index for the Prevention and Management of Wildfires in the Region of Sardinia **AIDAA 2019, XXV International Congress of Aeronautics and Astronautics**, Rome
October 2019	*G. Laneve, R. Bueno Morles, V. Pampanoni, R. Shaik* Support Wildfire management in Mediterranean Territories using multi-source satellite images **12th EARSeL Forest Fires SIG Workshop**, Rome

Education

October 2018	**Master's Degree in Space and Astronautics Engineering** **Sapienza University**, Rome	Final Grade: 110/110 *cum laude* Thesis: *"Application of UV Radiometry and Remote Sensing Techniques to the Measurement of Ozone in the Martian Atmosphere"*	Advisor: Prof. Christian Circi
March 2015	**Bachelor's Degree in Aerospace Engineering** **Sapienza University**, Rome	Final Grade: 110/110 Thesis: *"Manufacturing and Testing of a 1U CubeSat with Magnetic Attitude Control"*	Advisor: Prof. Paolo Teofilatto
July 2011	**High School Degree** **Liceo Scientifico "L. Spallanzani"**, Tivoli (Rome)	Final Grade: 100/100

Scholarships and Certificates

May 2019	AGI Orbit Determination ToolKit (ODTK)	1st Level Certification
Apr. 2019	ESRI ArcGIS	Getting Started with GIS
Oct. 2018	AGI Systems ToolKit (STK)	1st Level Certification
Oct. 2018	PEGASUS Certificate
Apr. 2018	Python Programming: A Concise Introduction	License: K7YC9L6QWMG4
Sept. 2010/2011	Assegno borsa di studio per merito A.S. 2010-2011, scuole secondarie II grado (€400)

Languages

Italian:	Mother tongue
English:	Fluent

Software Skills

Basic Knowledge:	Adina Structures, GNU/Linux OS, LaTeX Mars Climate Database, Simulink, Spenvis TUV, ENVI, ESA SNAP, ESRI ArcGIS
Intermediate Knowledge:	AGI STK, AGI ODTK, Microsoft Word, Microsoft Power Point
Advanced Knowledge:	Windows OS

Programming Skills

Basic Knowledge:	C, Fortran, Python
Advanced Knowledge:	Matlab

Driving License

Italian Driving License | European Cat. B

Interests and Activities

Literature, Music, Technology, Languages
Neuroscience, Psychology, Journalism, Science Communication
Boxing, Football

November 4, 2019

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