IVMSP 2022

IEEE 14th Image, Video, and Multidimensional Signal Processing Workshop

26-29 June 2022
Nafplio, Greece

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Multimodal Analysis, Fusion and Retrieval of satellite images

SPECIAL SESSION, CALL FOR PAPERS

The 2022 IEEE 14th Image, Video, and Multidimensional Signal Processing Workshop (IVMSP 2022) will be held in June 26-29, 2022 in Nafplio, the capital of the first Hellenic Republic (Greece). It will bring together leading experts from academia and industry to share the most recent and exciting advances in image, video, and multidimensional signal processing and analysis.

Deep learning and semantic technologies have recently introduced a paradigm shift in the domain of Earth Observation (EO) via generating higher level knowledge and combining heterogeneous data streams to enable the development of downstream services and applications. Copernicus data and other georeferenced data sources are often highly heterogeneous, distributed and semantically fragmented. The visual analysis and data fusion of all streams of data need to take advantage of the existing Data and Information Access Services (DIAS) and High Performance Computing (HPC) infrastructures, when required by the involved end users to deliver fully automated processes in decision support systems and Digital Twin set-up. Interpretable machine learning techniques should be deployed to unlock the knowledge that is hidden in massive streams of satellite images through explainable AI.

The aim of this Special Session is to host original papers on the multimodal fusion of optical or synthetic aperture radar (SAR) satellite images for the creation of visual analytics, additional knowledge, and value in real-life problems. Research advances and novel deep learning methods for multimodal indexing, analysis and retrieval that go beyond the state-of-the-art are highly welcome.

This special session includes presentation of novel research in:
- Generative Adversarial Networks (GANs) and data augmentation on satellite imagery
- Explainable Artificial Intelligence (XAI), feature selection and feature engineering
- Change and event detection over satellite image time series and big Data Cubes
- Distributed learning in satellite data on cloud and HPC infrastructures
- Fusion and retrieval of satellite images and other georeferenced data (street-view images, social media, UAV videos, Galileo GNSS data, etc.)
- Retrieving and interpreting social geo-located data
- Graph Neural Networks and Graph Convolutional Neural Networks on satellite data
- Reinforcement learning and active learning on multispectral images
- 3D-models and animations of multispectral content
- Deep learning architectures (CNN, RNN, LSTM, etc.) on satellite images
- Emerging applications of multimodal satellite image analysis and retrieval and fusion with other georeferenced multimedia (crisis management, journalism, tourism, security, water sector, public administration, etc.)

PAPER SUBMISSION
The language of the Workshop is English. Prospective authors are invited to submit full-length papers (up to 4 pages for technical content including figures, tables, references and one optional 5th page containing only references). IEEE templates for the paper format, and "no show" policy apply. Authors should indicate one or more of the above listed categories that best describe the topic of the paper. Submitted papers will be peer-reviewed by at least two experts in the field. To maximize visibility and impact as early as possible, all accepted papers will be published in IEEE Xplore through Open Preview and will be freely accessible and downloadable in final format beginning one month before the Workshop. In addition to the technical program, a social program will be offered to the participants and their companions. It will provide an opportunity to meet colleagues and friends against a backdrop of outstanding natural beauty and rich cultural heritage in one of the best-known international tourist destinations.

SPECIAL SESSION ORGANISERS
- Dr. Ilias Gialampoukidis, Centre for Research and Technology Hellas, Greece
- Dr. Stefanos Vrochidis, Centre for Research and Technology Hellas, Greece
- Dr. Ioannis Papoutsis, National Observatory of Athens, Greece
- Dr. Guido Vingione, Serco SpA, Italy
- Dr. Ioannis Kompatsiaris, Centre for Research and Technology Hellas, Greece

IMPORTANT DATES
- Submission of full papers – March 30, 2022
- Notification of acceptance – April 27, 2022
- Author advance registration – May 11, 2022
- Camera-ready paper submission – May 11, 2022