



INTERNATIONAL ASSOCIATION FOR PATTERN RECOGNITION

Technical Committee 7

PRRS 2020/2021

The International Association for Pattern Recognition (IAPR) Technical Committee 7 (TC-7 Remote Sensing and Mapping) organizes the **11th IAPR International Workshop on Pattern Recognition in Remote Sensing** (PRRS 2020/2021). This workshop is held in conjunction with the International Conference on Pattern Recognition (ICPR 2020) (<https://www.icpr2020.it/>). The workshop is sponsored by IAPR and International Society for Photogrammetry and Remote Sensing (ISPRS).

AIMS AND SCOPE

As one of the flagship events of the International Association for Pattern Recognition, Pattern Recognition in Remote Sensing Workshop serves as an event bringing together researchers from both pattern recognition and remote sensing, with emphasis on the application of pattern recognition methods to remotely sensed data. The steady progress in the development of new remote sensing devices and remote sensing technology has led to ever increasing data and new challenges. Thus, need arises to apply the latest methods of machine learning and pattern recognition for automated analysis of this kind of data. This workshop will provide an ideal forum for spreading and exchanging the latest experiences of international researchers. Topics might be related to a large range of topics, including, but not limited to:

- Hyperspectral and multispectral image analysis
- Extraction, selection, learning, and reduction of features
- Deep learning for Earth observation data
- Clustering
- Active and transfer learning

- Multi-modal and multi-temporal analysis
- Image analysis of SAR and airborne thermal data
- Recognition of man-made objects from aerial and space platforms
- Novel pattern recognition tasks in remote sensing applications
- Technical reviews on related topics

PROGRAM : JANUARY 10, 2021 (ONLINE EVENT)

14:00 Welcome

Ribana Roscher (University of Bonn), Gabriele Cavallaro (FZ Jülich)

14:10 – 15:00 Keynote

Beyond Labels: Weakly-supervised, Continual and Semi-supervised Learning for Earth Observation

Bertrand Le Saux (European Space Agency)

(live talk + Q&A)

[abstract](#)

[slides](#)

15:10 – 16:30 Q&A Session 1

(pre-recorded videos + live Q&A)

Remembering Both the Machine and the Crowd when Sampling Points: Active Learning for Semantic Segmentation of ALS Point Clouds

Michael Kölle (University of Stuttgart), Volker Walter (University of Stuttgart), Stefan Schmohl (University of Stuttgart), Uwe Sörgel (University of Stuttgart)

[slides](#)

[video](#)

Towards Urban Tree Recognition in Airborne Point Clouds with Deep 3D Single-Shot Detectors

Stefan Schmohl (University of Stuttgart), Michael Kölle (University of Stuttgart), Uwe Sörgel (University of Stuttgart)

[slides](#)

[video](#)

Shared-space Autoencoders with Randomized Skip Connections for Building Footprint Detection with Missing Views

Giannis Ashiotis (The Cyprus Institute), James Oldfield (The Cyprus Institute), Charalambos Chrysostomou (The Cyprus Institute), Theodoros Christoudias (The

Cyprus Institute), Mihalis Nicolaou (The Cyprus Institute)

[slides](#)

[video](#)

Assessment of CNN-based Methods for Poverty Estimation from Satellite Images

Robin Jarry (LIRMM), Marc Chaumont (LIRMM), Laure Berti-Equille (IRD), Gérard Subsol (LIRMM)

[slides](#)

[video](#)

16:30 – 16:50 Break

16:50 – 17:50 Q&A Session 2

(pre-recorded videos + live Q&A)

Using a binary diffractive optical element to increase the imaging system depth of field in UAV remote sensing tasks

Pavel Serafimovich (IPSI RAS), Alexey Dzyuba (ITMO University), Artem Nikonorov (Samara State Aerospace University), Nikolay Kazanskiy (IPSI RAS)

[slides](#)

[video](#)

Self-supervised pre-training enhances change detection in Sentinel-2 imagery

Marrit Leenstra (Almaviva), Diego Marcos (Wageningen University), Francesca Bovolo (Fondazione Bruno Kessler), Devis Tuia (EPFL)

[slides](#)

[video](#)

Early and Late Fusion of Multiple Modalities in Sentinel Imagery and Social Media Retrieval

Wei Yao (German Aerospace Center), Anastasia Moutzidou (CERTH-ITI), Dumitru Octavian (German Aerospace Center), Stelios Andreadis (CERTH-ITI), Ilias Gialampoukidis (CERTH-ITI), Stefanos Vrochidis (CERTH-ITI), Mihai Datcu (German Aerospace Center), Yiannis Kompatsiaris (CERTH-ITI)

[slides](#)

[video](#)

17:50 – 18:00 Final remarks

Ribana Roscher (University of Bonn), Gabriele Cavallaro (FZ Jülich)

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