

# Preface

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This volume contains the papers presented at the session "Image Processing and Earth Remote Sensing" within the V International Conference on Information Technology and Nanotechnology (ITNT-2019).

The conference was held in Samara, Russia, during May 21-24, 2019 (itnt-conf.org). The conference is a forum for leading researchers from all over the world aimed to discuss the latest advances in the basic and applied research in the field of Information Technology and Nanotechnology. It is also aimed to attract young people to advanced scientific research and share the latest trends in training and research programs for future ITNT specialists [1].

In addition to the session "Image Processing and Earth Remote Sensing", ITNT-2019 also included three other sessions: "Computer Optics and Nanophotonics", "Mathematical Modeling of Physico-Technical Processes and Systems", and "Data Science". The whole forum brought together more than 450 scientists from United Kingdom, Japan, Switzerland, Iran, Poland, Bulgaria, Finland, China, Kazakhstan and Russia, as well as representatives of global high-tech corporations, developers of modern electronics – Huawei, Nvidia, Intel, and Azimuth Photonics, and more than 60 cities in the world. 436 talks enabled discussion on a wide range of topics.

The topics of the session "Image Processing and Earth Remote Sensing" were grouped into the following key directions:

- Digital Image Processing (Filtering, Enhancement, Color Mapping, Compression, Spectral Transformations and Invariants);
- Visual Recognition and Retrieval (Segmentation, Clusterization, Classification, Retrieval, Feature Extraction and Selection, Descriptors, Dimensionality Reduction);
- Motion Analysis (Object Detection and Tracking, Face, Gesture and Action Recognition);
- Scene Reconstruction (3D Vision, Shape or Relief Reconstruction, Registration, Geometry Transformation);
- Remote Sensing Image Processing and Analysis (Geometric and Radiometric Correction, Mosaic, Classification, Dimensionality Reduction, Spectral Unmixing, Change Detection, Anomaly Detection, Data Fusion);
- Multimedia Protection and Information Hiding (Watermarking, Authentication, Forgery Detection, Steganography, Steganalysis);
- Geoinformatics (Vectorization, Tracing, Geospatial Analysis and Modeling).

This year we have received 120 submissions addressed to "Image Processing and Earth Remote Sensing". Each submission was carefully reviewed by the Program Committee members and the reviewers. Based on the reviews, we accepted 88 papers for the presentation at the conference (30 oral and 58 poster reports) and selected 51 papers out of 88 for publication in this volume.

We thank all the participants of ITNT-2019 for excellent presentations and discussions, and we wish to see all of them at our future events.

#### **Conference Organizers**

- Samara National Research University, Samara, Russia
- Image Processing Systems Institute of the RAS - Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of Russian Academy of Sciences, Samara, Russia

#### **Program Committee Chair**

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#### **Organizing Committee Chair**

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#### **Reference**

[1] Savelyev D A 2017 *Computer Optics* **41(5)** 775-785 DOI: 10.18287/2412-6179-2017-41-5-775-785