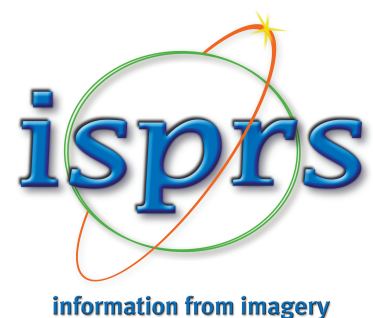


ISPRS WG V/5 and WG III/3 Workshop

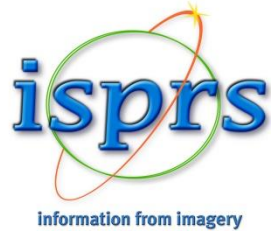
Photogrammetric techniques for video
surveillance, biometrics and biomedicine

TECHNICAL PROGRAM

Moscow, RUSSIA
25-27 May, 2015



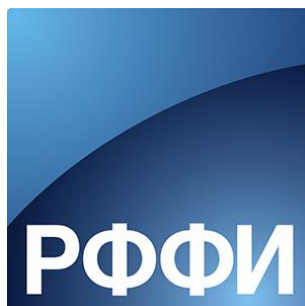
Conference organizers



Event of International Society for Photogrammetry and Remote Sensing



Organized by the State Research Institute of Aviation System (GosNIIAS) and Moscow State University of Geodesy and Cartography (MIIGAiK) and Russian Society for Photogrammetry and Remote Sensing



Supported by Russian Foundation for Basic Research (RFBR)

Welcome from the Organizing Committee

Welcome to Moscow and to the ISPRS WG V/5 and WG III/3 International Workshop "Photogrammetric techniques for video surveillance, biometrics and biomedicine" (PSBB15)

This is the first time when Moscow becomes a city of the ISPRS WG V/5 and WG III/3 International Workshop and we hope it is not the last time. Organizing Committee tried to make the Workshop friendly for all participants.

Program Committee was formed from 17 scientists experienced in areas of video surveillance, biometrics, and biomedicine. Most part of abstracts was evaluated by three reviews. Topic chairs then gave recommendations of accepting a paper for the ISPRS Archives, or reject it in case of serious problems.

We received 51 abstract submissions for the Workshop, which were reviewed by the Program Committee for making decision of acceptance/rejecting. As a result of reviewing process 30 submissions were accepted for presenting at the Workshop and 19 full papers were accepted for including in the ISPRS Archives. Decisions were taken purely on the basis of perceived paper quality without any targets or quotas. The proceedings of PSBB'15 are being provided on USB drives at the conference. All papers will be made available free of charge as part of the ISPRS Archives.

The Workshop has five technical sessions and a poster session. Also the Workshop schedule includes a keynote talk by Marco Attene (CNR – IMATI, Italy).

An immense amount of hard work and professionalism has gone into the preparations of the Workshop. In particular we appreciate a lot MIIGAiK as a home of the Workshop and its staff involved on preparation for the Workshop ; Xenia van Edig and Daniela Jodeit from Copernicus Publications - The Innovative Open Access Publisher; and the area chairs and reviewers. We are also grateful for the support provided by Russian Foundation for Basic Research (RFBR) and Russian Society of Photogrammetry and Remote Sensing (RSPRS).

Finally, on behalf of ISPRS Workgroups V/5 and III/3 we wish all attendees to have an interesting, informative, and usefull conference.

Organizing Committee

Organisers and Program Committee

Program Committee

Sergey Zheltov, State Research Institute of Aviation Systems, Russia, (co-chair)
Armin Gruen, ETH, Switzerland, (co-chair)
Marco Attene, CNR – IMATI, Italy
Silvia Biasotti, CNR – IMATI, Italy
Alexander Chibunichev, Moscow State University of Geodesy and Cartography (MIIGAiK), Russia
Alexey Chulichkov, Lomonosov Moscow State University, Russia
Thomas Dewez, BRGM- Direction des Risques et Prévention, France
Margarita Favorskaya, Siberian State Aerospace University, Russia
Shih-Chia Huang, National Taipei University of Technology, Taiwan
Andrey Kopylov, Tula State University, Russia
Clément Mallet, MATIS Laboratory - IGN, France
Leonid Mestetsky, Lomonosov Moscow State University, Russia
Dirk Rieke-Zapp, Breuckmann GmbH, Germany
Vladislav Sergeev, IPSI, Russian Academy of Sciences, Russia
Yury Vizilter, State Research Institute of Aviation Systems - GosNIIAS, Russia
Alper Yilmaz, The Ohio State University, USA
Vladimir Knyaz, State Research Institute of Aviation Systems - GosNIIAS, Russia

Organizing Committee

Alexander Chibunichev, Moscow State University of Geodesy and Cartography (MIIGAiK), Russia, (chair)
Vladimir Knyaz, State Research Institute of Aviation Systems - GosNIIAS, Russia (co-chair)
Yury Vizilter, State Research Institute of Aviation Systems - GosNIIAS, Russia
Boris Vishnyakov, State Research Institute of Aviation Systems - GosNIIAS, Russia
Alexander Mikhailov, Moscow State University of Geodesy and Cartography (MIIGAiK), Russia
Sergei Sidyakin, State Research Institute of Aviation Systems - GosNIIAS, Russia (Secretary)

PSBB2015 Technical Programm

25.05.2015

9:00 -10:00 Registration

10:00 - 10:30 Opening

Welcome speech from Rector of MIIGAiK
Andrey Mayorov, Rector of MIIGAiK

Welcome speech from Organizers
Sergey Zheltov, Head of GosNIIS

10:30 - 13:00 TC1: Human action detection and recognition
Chair: Vladimir Knyaz

10:30-11:00 Human action poselets estimation via color G-surf in still images
Margarita Favorskaya, Dmitry Novikov, Jylia Savitskaya

11:00-11:30 Recognition of human pose from images based on graph spectra
Alexei Zakharov, Alexei Barinov, Arkady Zhiznyakov

11:30-12:00 Music-elicited emotion identification using optical flow analysis of human face
Vladimir Kniaz, Zoya Smirnova

12:00-12:30 The generalization algorithm of images with human faces based on topological consistency
Evgeny Demyanov, Sergey Eremeev

12:30-13:00 Extraction of extended small-scale objects in digital images
Vladimir Volkov, Konstantin Cheredeev, Ivan Antsev, Eugeny Borisov

13:00-14:00 Lunch

14:00 - 15:30 Postersession

Using of methods of determining the position of man by his image in the system "Smart House"
Sergey Fomin, Popov Dmitriy, Orlov Alexey

25.05.2015

Fuzzy C-means algorithm for segmentation of aerial photography data obtained using unmanned aerial vehicle

Alexandra Sokolova, Maxim Akinin, Natalya Akinina, Anatoly Klochkov, Michail Nikiforov

Analysis opportunity to demonstrate how hyperspectral technology to detect and target recognition type "man"

Andrei Molchanov

Algorithm for estimation of 3D object orientation from images based on contour descriptors

Boris Alpatov, Pavel Babayan, Evghenii Maslennikov

Receptive fields for processing of video sequences

Irina Zhigulina, Igor Maslov

Curve-skeleton extraction from visual hull

Andrey Zimovnov

Prospects for odonto- and occlusiometric computer appliance use

Armen Gaboutchian, Vladimir Knyaz, Goharik Petrosyan, Anatoly Soloviev

26.05.2015

9:30-10:00 Registration

10:00 - 13:00 TC3: Morphology and shape analysis. Gesture recognition applications

Chair: Yury Vizilter

- 10:00-11:00 Advanced techniques to process, analyze and understand 3D shape models (Keynote speech)
Marco Attene
- 11:00-11:30 Computing of the minimum length polygon for a digital image based on the triangulation of the boundary corridor
Leonid Mestetskiy
- 11:30-12:00 Orientation spectrum algorithm development
Stas Bryanskiy, Sergey Sidyakin, Yuri Vizilter
- 12:00-12:30 Localization and recognition of dynamic hand gestures based on hierarchy of manifold classifiers
Margarita Favorskaya, Alexander Nosov, Aleksei Popov
- 12:30-13:00 Dactyl alphabet gesture recognition in a video sequence using Microsoft Kinect
Stanislav Artyukhin, LeonidMestetskiy

13:00 - 14:00 Lunch

14:00 - 15:00 Visit to MIIGAiK Museum

15:00 - 17:30 TC4: Head and face data analysis. Biometric applications
Chair: Margarita Favorskaya

- 15:00-15:30 Precise head tracking in hearing applications
Anna Maria Helle, Janna Pilinski, Thomas Luhmann
- 15:30-16:00 CT anatomy of buccal fat pad and its role in volumetric alterations of face
Robert Guryanov, Andrey Guryanov
- 16:00-16:30 Facial features detection using Hough texture transform
Vladimir Gorbatsevich

26.05.2015

16:30-17:00 Face recognition using local quantized patterns and Gabor filters
Vladimir Khryashchev, Anatoliy Nikitin, Olga Stepanova

17:00-17:30 Modeling of biometric identification system using the colored petri nets
Goharik Petrosyan, Lilit Ter-Vardanyan, Armen Gaboutchian

27.05.2015

10:00 - 12:00 TC5: Motion and image sequence analysis. Object detection and tracking

Chair: AlexandrChebunichev

- 10:00-10:30 Diffusion background model for moving objects detection
Boris Vishnyakov, Sergey Sidyakin
- 10:30-11:00 Classification of features of image sequences
Egor Pugin
- 11:00-11:30 Scalable photogrammetric motion capture system: development and application
Vladimir Knyaz
- 11:30-12:00 Recognition of single and overlay of objects on a conveyor belt
Svetlana Savicheva

12:00-13:00 Lunch

13:00-15:30 TC2: Medical imaging, visualization and systems

Chair: Boris Vishnyakov

- 13:00-13:30 A denoising of biomedical images
Dang Thanh, SergeyDvoenko
- 13:30-14:00 Automatic calcaneus tumor segmentation from CT images
Hatice Çatal Reis, Bulent Bayram
- 14:00-14:30 Measurements of teeth and occlusion on 3D models obtained photogrammetrically
Armen Gaboutchian, Vladimir Knyaz
- 14:30-15:00 An algorithm of healthcare facilities placement based on vector city plans and the population statistics
Constantine Kokurin, Sergey Eremeev
- 15:00-15:30 Multi-quadratic dynamic programming procedure of edge-preserving denoising for medical images
Cong Thang Pham, Andrey Kopylov

15:30 - 16:00 Closing

Workshop venue

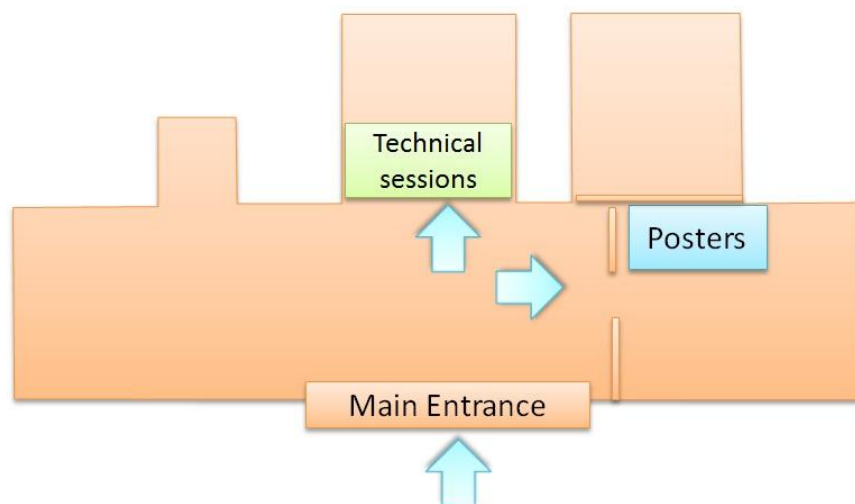
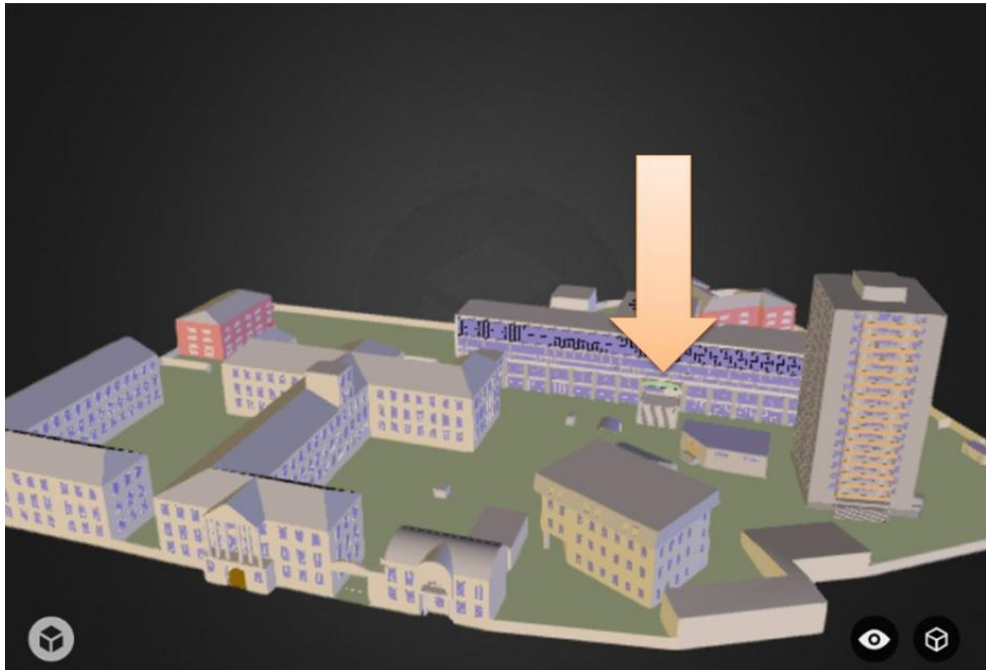
MIIGAiK, main building



Entrances to MIIGAiK campus:

1. From Kazakova street
2. From Gorokhovski pereulok

Workshop venue



Technical sessions – Scientific Council hall, ground floor

Posters – Conference hall, first floor

