

# PROGRAM

17TH INTERNATIONAL CONFERENCE ON  
PATTERN RECOGNITION AND INFORMATION PROCESSING  
**EMBEDDING THE FUTURE**

#PRIP2025  
16-18 SEPTEMBER MINSK

SCHEDULE  
SESSION TALKS  
LIGHTNING TALKS



# 17th International Conference on Pattern Recognition and Information Processing

16 -18 September 2025 • hybrid

Minsk • UIIP NAS Belarus

In an era of rapid technological advancement, the motto "Embedding the Future" emphasizes advances in pattern recognition and information processing. The ability to convert unprocessed data into interpretable representations is referred to embeddings. As data multimodality becomes more common, breakthrough technologies enable machines to recognize and handle this information more efficiently than ever before.

This conference will dive into these novel themes in basic and applied research. We encourage top scientists and students to present how these technologies may be used to solve practical problems in a variety of domains, such as bioinformatics, autonomous systems, healthcare, and more.

We're going to explore how these incredible breakthroughs can not only supercharge our tech skills but also pave the way to a smarter, more connected world, benefiting society as a whole!

**"Embedding the Future "**

Web-site: <https://prip.by/2025/>

YouTube channel: <https://www.youtube.com/@PRIPConference>

**#prip #prip2025**

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# Conference Organizers



United Institute of Informatics  
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Belarusian State University  
**Co-organizer**



College of Electronic Science and  
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**ATR Challenge Organizer**

## General Partnership



vebtech is a full cycle IT company and High Tech Park resident (Eastern Europe's largest IT hub) delivering enterprise software and AI solutions for banks and fintech since 2018, with 300+ specialists and 130+ certifications built on 25+ years of domain experience within the team.

As PRIP 2025 General Partner, vebtech highlights VAIB — vebtech Artificial Intelligence bunch — the innovative AI laboratory, delivering solutions in Computer Vision, NLP/LLM, Speech Recognition and Data Science. Combined with vebtech's expertise they turn ideas into secure, scalable products for finance and enterprise.



InnoTech Solutions is a Minsk-based IT company founded in 2018, delivering customer-oriented software services. Its team combines young professionals with experienced experts holding advanced degrees.

The company provides a full development cycle, from analysis and design to implementation, support, and training.

InnoTech also focuses on R&D, AI solutions, IT consulting, and outsourcing. Serving industries such as healthcare, energy, transport, banking, and telecommunications, it ensures reliable and effective digital transformation.

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BASNET, National Research and  
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The Kaiyuan International Mathematical  
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BezKassira.by,  
cloud-based ticketing platform



The Information Fusion Subcommittee  
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DATAHATA,  
data processing center

# Conference Regulations

The Conference will be held in a hybrid format, allowing participation both online and in-person. Presentation time allocations are as follows:

- **Session Talks** – 10 minutes for the presentation and 2 minutes for Q&A.
- **Flash Session** – 5 minutes for the presentation and 2 minutes for Q&A.
- **Lightning Talks** – 5 minutes for the presentation (no Q&A).

Please note that the time limit for Lightning Talks is strictly enforced: presentations exceeding 5 minutes will be terminated.

All speakers are required to familiarize themselves with the Conference schedule and their assigned presentation time.

- **Online speakers** must join during the *Get Connecting* slot prior to their session or during the scheduled break. They are expected to have a working microphone and camera. Upon receiving the floor from the moderator, the speaker should share their screen and deliver the presentation in their preferred format.
- **On-site speakers** must submit their presentation in advance to the technical specialist or moderator during the *Get Connecting* slot prior to their session or during the scheduled break.

**NOTE: Operating time of the conference is MINSK TIME ZONE (GMT+3)**

## Conference Sessions

**Plenary (P)** – Plenary Session (keynotes).

**Session Talks:**

- **Track A** – Sessions and **Flash Sessions (F-A)** “Computer Vision and Video Analytics”;
- **Track B** – Sessions and **Flash Sessions (F-B)** “Intelligent Systems, Data Analytics and Machine Learning”.

**Lightning Talks (L).**

## Privacy Policy

Acknowledge that you have completely read and fully understand the following!

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We would also like to draw your attention that during the conference, a free live YouTube stream will be organized, as well as audio and video recording of all speeches. We will use materials on the conference website to provide the conference participants with relevant information and to promote the event via social media, newsletters, mailshots, magazine articles, and blogs. During PRIP2025 we could also collect your feedback, take screenshots of you to use for such purposes.

We take your privacy seriously and will only use your personal information, provided by you. We will keep this information available on the PRIP2025 website for an indefinite period for informational purposes. Your registration contact details will be added to our mailing list, which is only used for disseminating information about this conference.



# Conference Schedule

Day 1- Tuesday (September 16, 2025) / Minsk Time Zone (GMT+3)

|  |  |  |  |
|--|--|--|--|
| 09:00-09:30  |  | Get Connecting / Networking  |  |
| 09:30-09:50  | Opening                                      | <ul style="list-style-type: none"><li>• Prof. Alexander Tuzikov (UIIP NASB). <i>Conference Chairman</i></li><li>• Dr. Sergey Kruglikov (UIIP NASB) <i>Conference Vice-Chairman</i></li><li>• Acad. Prof. Sergey Ablameyko (BSU). <i>Conference Vice-Chairman</i></li><li>• <i>Distinguished guests</i></li></ul>   |  |
| 09:50-11:00  | Plenary 1                                    | Session Chairman: Prof. Alexander Tuzikov  |  |
| 09:55-10:25  |  | <b>P1.1</b> Dmitry Chickrin<br>Design Templates for Unmanned Ground Vehicles and ADAS Subsystems   |  |
| 10:30-11:00  |  | <b>P1.2</b> Minglei Fu<br>Intelligent inspection robot system driven by multimodal large model   |  |
| 11:00-11:15  | Ceremony                                     | <b>Unveiling Ceremony of the China–Belarus Joint Laboratory of Embodied Artificial Intelligence Technology</b><br><i>Distinguished guests and representatives of:</i> <ul style="list-style-type: none"><li>• The State Scientific Institution “The United Institute of Informatics Problems of the National Academy of Sciences of Belarus” (Belarus)</li><li>• The State Scientific and Production Association “Optics, Optoelectronics and Laser Technology of the National Academy of Sciences of Belarus” (Belarus)</li><li>• Faculty of Applied Mathematics and Informatics of Belarusian State University (Belarus)</li><li>• Zhejiang University of Technology (China)</li></ul> |  |
| 11:15-11:30  |  | Morning <b>Coffee</b> (15 minutes)   |  |
| 11:30-13:00  | Session Moderator: Dr. Alexei Belotserkovsky |  |  |
| 11:30-11:45  | Lightning Talks L1                           | <b>Lightning Talks Opening: “vebtech VAIB” presentation</b>  |  |
| 11:45-13:00<br>5 min slots   |  | <b>L1.1 (online)</b> Xie YUhang, Zhenghao Cao, Sheng Xu<br>TCS: An algorithm for focusing on the segmentation of tree crowns and trunks in forest point clouds   |  |
|  |  | <b>L1.2 (online)</b> Leng Xiangguang, Ma Jun, Tsviatkou Viktar, Sirotko Sergey, Xiong Boli, Ji Kefeng<br>Time-Frequency Characteristics of Ships in Range-Compressed SAR Data  |  |
|  |  | <b>L1.3 (online)</b> Li Hao, Liu Chang<br>Efficient Sensor Selection Framework for Non-linear System Optimization  |  |
|  |  | <b>L1.4</b> Shaladonova Marina, Usanov Sergey<br>Machine Learning Approach in Searching Novel Human Aromatase Inhibitors   |  |
|  |  | <b>L1.5</b> Smorodin Viktor, Prokhorenko Vladislav<br>Adaptive Control System Based on Deep Neural Networks  |  |
|  |  | <b>L1.6</b> Qi Xiexing, Xiong Shuang, Liu Jiahan, Dang Zlfeng, Wang Nan<br>Data Processing in the Design of Pyramidal Horn Communication Terminal  |  |
|  |  | <b>L1.7</b> Kabulov Timur<br>Deep Learning Methods for Miltiple Sclerosis Lesions Segmentation on MRI data   |  |
|  |  | <b>L1.8</b> Bintsarouski Leanid, Pirshtuk Dzianis<br>GPU-Only Neural Network Inference Using Fragment Shaders in OpenGL  |  |
|  |  | <b>L1.9 (online)</b> Markelov Vladimir<br>Development of a Multitasking Control System for Small Underwater Robotic Vehicles Based on STM32 and FreeRtos   |  |
|  |  | <b>L1.10</b> Gao Yuhang, Ha Nasi<br>A-LightNet: A Lightweight YOLOv8n-Based Model for Aerial Small Object Detection  |  |
| <b>L1.11 (online)</b> Gustov Egor, Chickrin Dmitry<br>Structural and Circuit Design Aspects of Implementing a Two-Level Computational Control Unit for an Unmanned Vehicle |  |  |  |

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|-------------|--------------------|--|--|
| 13:00-13:40 |                    | Networking Lunch (40 minutes)  |  |
| 13:40-15:30 |                    | Session Chairman: Dr. Anton Egorchev (ICMIT, Tatarstan, Russia)  |  |
| 13:40-13:52 | Session Talks S-A1 | S-A1.1 Egorchev Anton, Derzhavin Dmitry, Chickrin Dmitry, Shabernev Gleb, Vafin IIsaf<br>System of machine vision algorithms for detecting and eliminating speckle noise in ultrasound images using a convolutional neural network                               |  |
| 13:52-14:04 |                    | S-A1.2 Li Dongsheng, Yu Lian, Wang Guoyan, Fan Hongqi, Tsviatkou Viktor<br>Multi-Camera Pairwise Calibration Through Joint Optimization Method   |  |
| 14:04-14:16 |                    | S-A1.3 (online) Ihnatsyeva Sviatlana, Tamashevich Mikita, Bohush Rykhard<br>Open-World Person Re-identification Based on Face and Appearance Features  |  |
| 14:16-14:28 |                    | S-A1.4 (online) Kosarava Katsiaryna<br>Optimizing ECG Image Processing: A Multi-Method Approach to Signal Extraction and Recovery  |  |
| 14:28-14:40 |                    | S-A1.5 Zhao Shuyi, Zhang Chi, Ma Jun<br>A SAR Ship Detection Method Enhanced by Receptive Field Attention  |  |
| 14:40-14:52 |                    | S-A1.6 Wang Wenqi, Zhang Xu, Ma Jun,<br>Sam-Yolov12: Lightweight Sar Ship Detection Via Speckle Attention  |  |
| 14:52-15:04 |                    | S-A1.7 Li Bao, Sergey Ablameyko<br>Multimodal person emotion analysis system based on shared Transformer architecture  |  |
| 15:04-15:16 |                    | S-A1.8 Kurachka Kanstantsin, Ren Huanhai, Wang Xuemei<br>Comparative Analysis of Deep Learning Models for Lumbar Vertebrae Segmentation in MRI Images  |  |
| 15:16-15:28 |                    | S-A1.9 Lian Hongfei, Jiang Yanwen, Fan Hongqi, Viktor Tsviatkou, Alexander Gusinsky<br>A Fast Bayesian Compressive Sensing Super-Resolution Method for Forward-Looking Imaging Radar   |  |
| 15:30-15:50 |                    | Afternoon Recharge (20 minutes)  |  |
| 15:50-17:40 |                    | Session Chairman: Dr. Boris Zhalezka (BNTU, Belarus)   |  |
| 15:50-16:02 | Session Talks S-B1 | S-B1.1 (online) Archvadze Natela, Pkhovelishvili Merab, Shetsiruli Lia<br>Strategy for Building Multi-Step Forecasting Models  |  |
| 16:02-16:14 |                    | S-B1.2 (online) Denisov Evgeny, Shindor Olga<br>Features of Electrical Fluctuations Wavelet Transform for Hydrogen Fuel Cell Diagnostics   |  |
| 16:14-16:26 |                    | S-B1.3 Novoselova Natalia, Tom Igor<br>Disease modules identification using gene mutations and biological networks   |  |
| 16:26-16:38 |                    | S-B1.4 Guzarevich Anna, Tuzikov Alexander<br>Genomic-Based Algorithms for Identification of Mycobacterium Tuberculosis and Nontuberculous Mycobacteria   |  |
| 16:38-16:50 |                    | S-B1.5 (online) Spasić Slađana, Tomašević Violeta<br>Predicting Student Performance Using the Multilayer Perceptron Method Combined with Traditional Evaluation Techniques   |  |
| 16:50-17:02 |                    | S-B1.6 (online) Zakharov Igor, Bobby Pradeep, Howell Mark<br>SIApp: Sea Ice Analyzer Application   |  |
| 17:02-17:14 |                    | S-B1.7 Hanchar Hanna, Furs Kanstantsin, Wang Yixin, Lyu Liang-Dong, Tuzikov Alexander, Andrianov Alexander<br>Computational Identification of Novel Potential Inhibitors Against the InhA Enzyme of Mycobacterium tuberculosis Using a Drug Repurposing Strategy |  |
| 17:14-17:26 |                    | S-B1.8 Furs Kanstantsin, Laikou Yan, Hanchar Hanna, Tuzikov Alexander, Andrianov Alexander<br>Comparative Evaluation of the Performance of Scoring Functions in Docking-Based Virtual Screening and Drug Design  |  |
| 17:26-17:38 |                    | S-B1.9 Zhalezka Boris, Korolenok Karina, Shamardzina Iryna<br>Theory and Practice of Procedures Digitalization for Designing Lightweight Parts Based on Cellular Structures  |  |
| 17:40-18:00 |                    | Stretch & Talk Break (20 minutes)  |  |

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| 18:00-19:00 | Session Chairman: Pavel Khrustalev (KSTA, Russia) |  |
| 18:00-18:07 | Flash Session F-A2                                | <b>F-A2.1</b> Sushchenko Andrei, Rudykh Roman<br>Impact of Data Augmentation on Plant Disease Classification Using Transfer Learning   |
| 18:07-18:14 |   | <b>F-A2.2 (online)</b> Kharinov Mikhail<br>Recurrent Low-Parameter Multi-Otsu Method for Image Structure Extraction  |
| 18:14-18:21 |   | <b>F-A2.3</b> Khrustalev Pavel<br>Orientation of Unmanned Ground Vehicle in Software Control Mode  |
| 18:21-18:28 |   | <b>F-A2.4</b> Khrustalev Pavel, Smyshnikov Roman, Bryndin Dmitrii, Matveev Sergei<br>Hardware Features of Modern Unmanned Ground Vehicles  |
| 18:28-18:35 |   | <b>F-A2.5</b> Kurochka Konstantin, Panarin Kosntantin, Karpenko Daniil<br>An Approach to Resource-Efficient Optimization for Real-Time Computer Vision-Based Obs Monitoring on Resource-Constrained Industrial Objects |
| 18:35-18:42 |   | <b>F-A2.6</b> Afanasyeva Svetlana, Kuznetsov Kirill, Seleznev Tim, Amosova Elena<br>Detection of Oil Pollution in Oceanic Waters   |
| 18:42-18:49 |   | <b>F-A2.7</b> TangNone Yi, Pertsau Dmitry<br>Multi-Constraint Enhanced DWA for Robust and Smooth Local Navigation  |
| 18:49-18:56 |   | <b>F-A2.8</b> Kravchuk Vladimir, Arkhipov Andrey<br>Development of a Vision System for Assessing the Surmount Ability of Obstacles in the Path of a Mobile Robot   |
| 19:00       | End of the official program of the day 1          |  |
| 19:30-23:00 | Walking Dinner Party by Innotech Solution         |  |

## Day 2 – Wednesday (September 17, 2025) / Minsk Time Zone (GMT+3)

|             |   |   |
|-------------|---|---|
| 09:00-09:30 | Get Connecting / Networking                   |   |
| 09:30-10:40 | Plenary                                       | Session Chairman: Prof. Vassili Kovalev   |
| 09:30-10:40 |   | <b>P2</b> Sergey Markov.<br>From LLM Agents to Practical AGI: The Cutting Edge of Research and a Human-Centric Approach   |
| 10:40-11:00 | Morning Coffee (20 minutes)                   |   |
| 11:00-13:30 | Session Chairman: Tim Seleznev (FEFU, Russia) |   |
| 11:00-11:12 | Session Talks S-B2                            | <b>B2.1 (online)</b> Usatyuk Vasiliy, Egorov Sergey<br>Graph-Based Sparse Random Projections with Cycle Optimization for Feature Expansion  |
| 11:12-11:24 |   | <b>B2.2 (online)</b> Usatyuk Vasiliy, Sapozhnikov Denis, Egorov Sergey<br>Scalable Bethe-Permanent Approximations and Graph Sparsification for Mitigating Over-Smoothing in GNNs with RBIM Embeddings |
| 11:24-11:36 |   | <b>B2.3 (online)</b> Jiang Nana, Luo Huiqi Xue Haoyu, Li Ruochen, Zhu Jubo<br>Localized Bootstrap Contrastive Learning Network for Few-Shot PolSAR Image Classification                               |
| 11:36-11:48 |   | <b>B2.4 (online)</b> Huo Jingyang, Lu Haozong, Ren Yi, Lu QuanCheng, Lei Qining, Fan Hongqi<br>Design and Implementation of a Lightweight UGS System Using Dual Geophones                             |
| 11:48-12:00 |   | <b>B2.5 (online)</b> Khasanov Ildar, Khasanova Diana<br>From Data to Diagnosis: Voice as a Digital Biomarker in Parkinson's Disease Patients  |
| 12:00-12:12 |   | <b>B2.6 (online)</b> Song Qingqing, Xia Shaoliang<br>Change-Point Detection Utilizing Normalized Entropy as a Fundamental Metric  |
| 12:12-12:24 |   | <b>B2.7</b> Seleznev Tim, Kuznetsov Kirill, Amosova Elena, Afanasyeva Svetlana<br>Predicting Red Tides from Biological Samples in the Sea of Japan and Bering Sea Using Machine Learning Methods      |
| 12:24-12:36 |   | <b>B2.8 (online)</b> Xia Shaoliang, Song Qingqing   |



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|----------------------------|--|---|
|                            |  | Multi-Horizon Node-Level Resource Optimization in Cloud Infrastructures via Machine Learning and Particle Swarm Optimization  |
| 12:36-12:48                | Session Talks S-B2                           | <b>B2.9 (online)</b> Ananyev Roman, Isaev Igor, Osborne Ivan, Rodionov Eugeny, Shimelevich Mikhail, Dolenko Sergey<br>Application of Algorithms for Selection and Analysis of Multicollinear Input Features in Solving Inverse Problems of Exploration Geophysics |
| 12:48-13:00                |  | <b>B2.10</b> Gong Shengshuo, Shen Qiujie, Varlamov Oleg<br>MIVAR Decision-Making System for Cargo Distribution and Transportation by Groups of Warehouse Robots   |
| 13:00-13:12                |  | <b>B2.11</b> Shen Qiujie, Gong ShengShuo, Oleg Varlamov<br>MIVAR Expert System-Based Information Decision Model for Automated Robots in Dynamic Environments  |
| 13:12-13:24                |  | <b>B2.12 (online)</b> Kanturski Jan, Kłopotek Robert<br>Flood Prediction Based on Artificial Intelligence and Edge Computing  |
| 13:30-14:20                | Networking Lunch (50 minutes)                |   |
| 14:20-15:45                | Session Moderator: Dr. Alexei Belotserkovsky |   |
| 14:20-15:45<br>5 min slots | Lightning Talks L2                           | <b>L2.1</b> Kaubasa Halina, Azarov Elias<br>Learning to Synthesize: GAN Optimization with Imitation and Distribution Feedback   |
|                            |  | <b>L2.2</b> Baranova Vasilina, Spiridonov Alexander<br>Video Data Processing Algorithm for Optical Surveillance Systems to Detect and Determine Orbits of Unknown Space Objects   |
|                            |  | <b>L2.3</b> Lopatko Eguene<br>Development of a ROS-Based Mobile Robot for High-Precision Indoor Mapping   |
|                            |  | <b>L2.4</b> Himbitskaya Elena, Svistunova Kseniya, Kezik Siarhei<br>Segmentation-Based Attention Mask for Enhancing Fundus Image Diagnosing   |
|                            |  | <b>L2.5</b> Karkotskiy Alexander<br>Comparison of Alternative Methods to Laplacian Pyramidal Decomposition in Image Fusion Problem  |
|                            |  | <b>L2.6 (online)</b> Krech Nastassia<br>Reconstruction of the Spectral Image from RGB Images  |
|                            |  | <b>L2.7</b> Senkin Aleksey<br>Assessing Carbon Absorption in Drone Images   |
|                            |  | <b>L2.8</b> Saladukha Artsiom, Kovalev Vassili<br>Controlled image generation with generative adversarial networks  |
|                            |  | <b>L2.9</b> Adamova Alisa<br>Comparative Analysis of HRV Parameters Using Time Series and Absolute Increments in Normal and Arrhythmic ECG Signals  |
|                            |  | <b>L2.10 (online)</b> Yurtunbaev Danil, Egorov Gleb<br>Distributed Analytical Energy Monitoring System  |
|                            |  | <b>L2.11</b> Budanov Konstantin<br>Evaluation of effectiveness of the method of multilevel amplitude discrimination of ECG signal in arrhythmia detection   |
|                            |  | <b>L2.12</b> Saetchnikov Ivan, Skakun Victor, Tcherniavskaia Elina<br>Hybrid Deep Semi-Supervised Learning Model for Sparse Distributed Object Recognition in Multi-Parameter Data  |
|                            |  | <b>L2.13</b> Halian Artsiom, Kovalev Vassili<br>Methods for reconstructing parts training images from a pre-trained neural network  |
| 15:45-16:00                | Stretch & Talk Break (15 minutes)            |   |

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|-------------|--|---|
| 16:00-17:40 | Session Chairman: Prof. Jianfei Wu (NUDT, China)         |   |
| 16:00-16:12 | Session Talks S-A3                                       | <b>S-A3.1</b> Adamovsky Egor, Bohush Rykhard, Tamashevich Mikita<br>Real-time smoke detection in video based on single-board computer   |
| 16:12-16:24 |  | <b>S-A3.2</b> Wu Xianyi, Ye Shiping, Ablameyko Sergey<br>Target Detection in Remote Sensing Images based on improved YOLOv11 by SuperTokenAttention mechanism   |
| 16:24-16:36 |  | <b>S-A3.3</b> Liu Jiahan, Dang Zhifeng, Xiong Shuang, Ma Jun, Qi Xiexing, Li Gaofeng<br>Russian Handwriting Recognition Using VGG-BiLSTM-CTC Transfer Learning  |
| 16:36-16:48 |  | <b>S-A3.4</b> Poleshchenko Dmitriy, Mikhailov Ilia<br>Automatic Identification and Quality Assessment of Potato Planting Rows Using UAV Imagery   |
| 16:48-17:00 |  | <b>S-A3.5</b> Sun Jiazhi, Li Dongdong, Chen Rui, Gao Zhinan, Kuai Yangliu<br>Towards Unified Transformer for Drone Based Multi-Task Object Detection  |
| 17:00-17:12 |  | <b>S-A3.6</b> Pertsau Dmitry, Khatsianeich Artsemi<br>Segmentation Algorithms in Processing Satellite Images  |
| 17:12-17:24 |  | <b>S-A3.7</b> Zhukovsky Evgeny, Xuqing Feng, Xitong Liang, Nedzved Alexander<br>A PCA-Based Approach for Dynamic Yellow Chromatophore Detection in Cuttlefish Skin  |
| 17:24-17:36 |  | <b>S-A3.8</b> Vengerenko Vadim Inyutin Alexander<br>Approaches to the Printed Circuit Board Defects Detection   |
| 17:40-18:00 | Networking <b>Recharge</b> (20 minutes)                  |   |
| 18:00-19:30 | Session Chairman: Dr. Valiaryan Ivashenka (BSUIR, Minsk) |   |
| 18:00-18:07 | Flash Session F-B3                                       | <b>F-B3.1</b> Amosova Elena, Kuznetsov Kirill<br>Solution of Direct and Inverse Problems of Mathematical Physics Using a New Projection Method Physics Informed Neural Networks (PINN).   |
| 18:07-18:14 |  | <b>F-B3.2</b> Zaharieva Vadim<br>Hybrid Voice Activity Detection and Speaker Gender Separation Model  |
| 18:14-18:21 |  | <b>F-B3.3 (online)</b> Mushchina Anastasia, Isaev Igor, Burikov Sergei, Dolenko Tatiana, Dolenko Sergei<br>Use of Variational Autoencoders to Enhance the Representativity of Experimental Data                                   |
| 18:21-18:28 |  | <b>F-B3.4 (online)</b> Rozhnov Aleksei, Hallikar Rohini., Tyurin Sergey, Gudov Gennady<br>Applied Issues of Experimental Media Content Synthesis: System Integration of Tasks and Evaluation of Information Processing Efficiency |
| 18:28-18:35 |  | <b>F-B3.5 (online)</b> Rozhnov Aleksei, Tyurin Sergey<br>An Exploratory Study on Psychoacoustic Technologies for Intelligent Transport Systems: A Preliminary Assessment of Efficiency and Data Management                        |
| 18:35-18:42 |  | <b>F-B3.6</b> Vorobeychikov Sergey, Burkatovskaya Yulia<br>Parameter Estimation for Arbitrary Order MMPP  |
| 18:42-18:49 |  | <b>F-B3.7</b> 108 Li Gaofeng, Wang Wenqi, Zhang Xu, Zhao Shuyi, Zhang Chi<br>Inter-Channel Attention Transformer for POLinSAR Image Classification  |
| 18:49-18:56 |  | <b>F-B3.8</b> 111 Krivalcevic Egor, Vashkevich Maxim<br>Practical Aspects of FPGA Implementation of Neural Network for Image Classification Based on Learned Separable Transform  |
| 18:56-19:03 |  | <b>F-B3.9</b> 114 Krasnoproshin Daniil, Vashkevich Maxim<br>Speech Emotion Recognition Using LSTM-based Neural Network with Local Attention   |
| 19:03-19:10 |  | <b>F-B3.10</b> Ivashenka Valiaryan<br>Semantic space: between continuity and infinity   |
| 19:10-19:17 |  | <b>F-B3.11</b> Parkhimenka Uladzimir, Bykau Aliaksei<br>Pattern Recognition in Structural Dynamics of Input-output Data (China's Economy, 1981–2018)  |
| 19:20       | End of the official program of the day 2                 |   |

**Day 3 – Thursday (September 18, 2025) / Minsk Time Zone (GMT+3)**

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|-------------|--|--|
| 09:00-09:30 | Get Connecting / Networking                      |  |
| 09:30-10:30 | Session Chairman: Acad. Sergey Ablameyko         |  |
| 09:30-10:00 | Plenary  | <b>P3.1 (online)</b> Hongqi Fan<br>Object Motion Mode Identification Based on Radar Signature  |
| 10:00-10:30 |  | <b>P3.2</b> Dongdong Li<br>Exploring Efficient and Effective Sequence Learning for Visual Object Tracking  |
| 10:30-10:50 | Morning Coffee (20 minutes)                      |  |
| 10:50-12:10 | Session Chairman: Dr. Dongdong Li (NUDT, China)  |  |
| 10:50-11:02 | Session Talks S-A4                               | <b>S-A4.1 (online)</b> Qi Qiming, Fan Hongqi, Wang Guoyan, Li Biao, Pan Yonglei<br>A 3D Vision Simulator for Multi-Camera Systems  |
| 11:02-11:14 |  | <b>S-A4.2 (online)</b> Yuan Tao, Li Yuanzhe, Fan Hongqi, Zhao Feng, He Feng, Dong Zhen<br>Joint Range-Angle Unambiguous Estimation Based on DAPSO-OMP for FDA-MIMO Radar                                   |
| 11:14-11:26 |  | <b>S-A4.3 (online)</b> Bai Heng, Ding Qingtang, Yang Jungang, Liu Haoxufei<br>Leverage Semantic Prior from SAM for Super-Resolution  |
| 11:26-11:38 |  | <b>S-A4.4 (online)</b> Pan Yonglei, Wang Guoyan, Qi Qiming, Fan Hongqi, Li Biao, He Jun<br>MCDSO: A Direct Visual SLAM System for Wilderness Environments Using Multiple Cameras                           |
| 11:38-11:50 |  | <b>S-A4.5 (online)</b> Zhou Jiwei, Wang Pu, He Jiajie, An Chengjin, Yang Jungang, Zhao Wending<br>Efficient Light Field Image Super-Resolution with Shared-Attention Transformers                          |
| 11:50-12:02 |  | <b>S-A4.6 (online)</b> Yu Lian, Li Dongsheng, Wang Guoyan, Fan Hongqi<br>Design and Verification of a Centralized Multi-Agent Visual SLAM System Based on Cloud-Native Architecture                        |
| 12:02-12:08 |  | <b>S-A4.7 (online)</b> Li Jun, Liu Qiuyu, Jiang Yanwen, Lian Hongfei, Zeng Xiangen<br>A Demodulation Method for DDMA-MIMO in Strong Clutter Background   |
| 12:10-13:00 | Networking Lunch<br>(50 minutes)                 | <div> <div>ATR Challenge</div> <div> Session Moderator: Dr. Dongdong Li (NUDT, China)<br/><br/> TO BE ANNOUNCED </div> </div>  |
| 13:00-14:00 | Moderator: Dr. Marina Lukashevich (BSU, Belarus) |  |
| 13:00-13:12 | Session Talks S-B4                               | <b>B4.1</b> Pukhovskaya Polina, Prokhorov Igor<br>Localization methods of scattering inhomogeneities in acoustic imaging   |
| 13:12-13:24 |  | <b>B4.2</b> Safiullin Tuleubay, Malugin Vladimir<br>Calculating High-Frequency Consumer Price Sub-Indexes: Web-Scraping and Classification   |
| 13:24-13:36 |  | <b>B4.3</b> Kim Tatyana<br>Control of an Anthropomorphic Walking Robot Using Reinforcement Learning  |
| 13:36-13:48 |  | <b>B4.4</b> Ivaniuk Alexander, Burko Liana<br>Unclonable identification and true random number generation based on CRO PUF   |
| 13:48-14:00 |  | <b>B4.5</b> Zianouka Yauheniya, Dydo Olga, Zhalova Daria, Khokhlov Vitali, Bakunovich Andrei,<br>Kykharevich Gleb An automatic bird voice recognition system based on artificial intelligence technologies |
| 14:00-14:12 |  | <b>B4.6</b> Filippov Maxim<br>Theoretical study and experimental verification of recognition algorithms based on the measure of precedence   |
| 14:12-14:24 |  | <b>B4.7</b> Osipov Aleksey, Petrovsky Nick<br>FPGA Implementation of Quaternionic Fully Connected Neural Network for Image Classification  |
| 14:24-14:36 |  | <b>B4.8 (online)</b> Bekiyeva Maral, Orazdurdyeva Gulshat, Orazova Ogulbibibi<br>Encoding and Information Protection Algorithms in Digital Communication Channels  |
| 14:36-14:48 |  | <b>B4.9 (online)</b> Tashliyev Arslan, Amansahedov Charyyar<br>AI-Assisted Static and Dynamic Analysis of Foundation Beams with Variable Thickness on Stochastic Elastic Foundations                       |

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|-------------|--|--|
| 14:48-15:00 | Session Talks S-B4                       | <b>B4.10</b> Vychugzhanin Mikhail, Kireev Nikita, Kuzmin Andrey<br>Determination of movement types based on wrist accelerometer data using machine learning technology   |
| 15:00-15:12 |  | <b>B4.11</b> Xiang Yu, Andrianov Alexander, Tuzikov Alexander<br>Combining Hierarchical Clustering and Multi-Stage Feature Selection to Identify Drug Resistance–Associated Single Nucleotide Polymorphisms in <i>Mycobacterium tuberculosis</i>   |
| 15:12-15:24 |  | <b>B4.12</b> Vengerenko Vadim, Lukashevich Marina<br>Neural Network Architecture Search Approach for Telemetry Data Classification   |
| 15:24-15:36 |  | <b>B4.13</b> Varvashevich Angelina, Kovalev Vassili<br>Defenses for preventing attacks in the task of classifying medical images   |
| 15:40-16:00 | Afternoon <b>Recharge</b> (20 minutes)   |  |
| 16:00-16:15 | Ceremony                                 | <b>Lightning Talks Award Ceremony</b><br><i>Organizers:</i> <ul style="list-style-type: none"> <li>• The State Scientific Institution “The United Institute of Informatics Problems of the National Academy of Sciences of Belarus” (Belarus)</li> <li>• VEB Technologies (Belarus)</li> </ul> <i>Evaluation Committee:</i> <ul style="list-style-type: none"> <li>• Acad. Prof. Sergey Ablameyko (BSU). <i>Committee Chairman</i></li> <li>• Dr. Marina Lukashevich</li> <li>• Prof. Alexander Nedzved</li> </ul> |
| 16:15-16:45 | Closing                                  | <ul style="list-style-type: none"> <li>• Prof. Alexander Tuzikov (UIIP NASB). Conference Chairman</li> <li>• Acad. Prof. Sergey Ablameyko (BSU). Conference Vice-Chairman</li> <li>• Dr. Alexei Belotserkovsky (UIIP NASB)</li> </ul>  |
|             | Open Floor – Walking Mic                 |  |
| 16:45-17:15 | Goodbye-Coffee                           |  |
| 19:30       | End of the official program of the day 2 |  |

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YouTube channel: <https://www.youtube.com/@PRIPConference>

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