

# 16th International Conference «Intelligent Systems» (INTELS'24)

December 2-4, 2024

## PRELIMINARY AGENDA

December 2, 2024 (Monday)

08:30 – 9:30 Registration

9:30 П8  
Opening Ceremony

10:00  
Plenary keynote 1: Kuznetsov N.V.  
Hidden attractors and global stability in theoretical problems and engineering applications

10:50  
Plenary keynote 2: Martinez Genaro J.  
Computing and complex dynamics in robots  
ONLINE

11:40  
Zatsarinnyy A.A. On the significant achievements of Russian scientists in the field of information and telecommunication technologies. On the 300th anniversary of the Russian Academy of Sciences (RAS)

12:00 – 13:25  
Photo Session, Lunch

13:25 – 16:05  
Track 1 П8  
2729, 2978, 3053,  
3095, 2769, 3004,  
2568, 3171

13:25 – 16:05  
Track 2 706  
2808, 3007, 3023, 3048,  
3154, 3054, 3057, 3139

13:25 – 16:05  
Track 3 707  
3028, 2680, 2692, 3148,  
2667, 2770, 2721, 3237

WORKSHOP П8a  
13:45 – 14:45  
Lecture  
14:45 – 16:05  
2880, 2951, 2971, 3089

16:05 – 16:20  
Coffee Break

16:05 – 16:20  
Coffee Break

16:05 – 16:20  
Coffee Break

16:05 – 16:20  
Coffee Break

16:20 – 18:20  
Track 1 П8  
2794, 2870, 2977,  
3092, 3155, 3117

16:20 – 18:20  
Track 2 706  
2411, 2554, 3059, 3082,  
3151, 3153

16:20 – 18:20  
Track 3 707  
2822, 2799, 3218, 3093,  
3097, 3130

16:20 – 18:20  
WORKSHOP П8a  
3119, 3124, 3149, 3199, 3201, 3222

19:00  
Fourchette Restaurant

## December 3, 2024 (Tuesday)

09:00 – 10:00 Registration				
10:00 <span style="float: right;">П8</span> Plenary keynote 3: Bezrodnykh S.I. Analytic continuation of the multiple hypergeometric functions, the crowding problem and related topics				
10:45 Plenary keynote 4: Diveev A.I. Problem of search for mathematical expressions by symbolic regression methods				
11.30 – 12.45 Excursion to SuperComputer Center MSU 270				
12:45 – 13:45 Lunch				
13:45 – 16:05 <b>Track 1 П8</b> 3015, 3035, 3088, 3120, 3121, 3146, 3063	13:45 – 16:05 <b>Track 3 П8a</b> 2596, 2791, 2803, 2828, 2922, 3006, 3017	13:45 – 16:05 <b>Track 3 706</b> 2986, 2990, 2790, 3041, 3052, 3056, 3070	13:45 – 16:05 <b>Track 3 707</b> 3090, 3091, 3116, 3143, 3144, 3202, 3228	
16:05 – 16:20 Coffee Break	16:05 – 16:20 Coffee Break	16:05 – 16:20 Coffee Break	16:05 – 16:20 Coffee Break	
16:20 – 18:00 526a Round Table Discussion				

## December 4, 2024 (Wednesday)

12:00 – 14:00 Visit to Robotic Center FRC CSC RAS Vavilova str., 42, room 454				
Coffee Break				

# Technical Program

## Track 1

### Theoretical Aspects of Intelligent Systems

Paper ID	Authors
2568	<i>Izmailov Alexey, Uskov Evgeny, Yan Zhibai</i> Piecewise Levenberg–Marquardt Method for Generalized Nash Equilibrium Problems
2729	<i>Grusho Alexander, Grusho Nick, Zabezhailo Michael, Zatsarinny Alexander, Kulchenkov Vladislav, Timonina Elena</i> About Trust in Intelligent Data Analysis
2769	<i>Borisov Andrey, Semenikhin Konstantin, Smelyanskiy Ruslan, Stepanov Evgeniy</i> Optimization approach to the problem of SD-WAN channel selection
2794	<i>Levina A.B., Chernenko P.G., Boyko S.V.</i> Binary code compression based on decision trees
2870	<i>Andrey Borisov, Yuri Kurinov</i> Comparison of Optimal Linear and Non-Linear Filtering Estimates for a Class of Markov Jump Processes
2977	<i>Kitaeva Anna, Zhukovskaya Alexandra, Cao Yu</i> Residues Control for Perishables in Retail through Dynamic Pricing
2978	<i>Pham Van Tuan, Khanh N.D., Hung N.N.</i> Control Algorithm for Reducing the Influence of External Load on the Steering Drive System
3004	<i>Nguyen Van Hoa, Pham Van Tuan, Nguyen Quang Vinh, Nguyen Tat Tuan</i> Optimization of Adaptive Neural-Fuzzy Network Controller Using Particle Swam Optimization Algorithm to Depth Control for AUV
3015	<i>Karaulov Vladislav, Stepanov Oleg, Gruzlikov Alexander, Litvinenko Yulia</i> Comparison of Algorithms for Estimating the AUVs Coordinates and Heading Angle in the Task of Approaching the Stationary Landing Platform
3035	<i>Podoprosvetov Aleksei, Smolin Vladimir, Sokolov Sergey</i> Possibilities for increasing the accuracy of neural network approximation of nonlinear functions for control problems
3053	<i>Jose K. P., Bobina J Mattam, Salini S Nair</i> Stochastic Analysis of a Perishable Inventory System with Production, Retrial and Varying Service Rates
3063	<i>Kudryavtsev Sergey</i> Reconstruction derivatives from values of functions belonging to Nikolskii-Besov classes of mixed smoothness in domains of a certain kind
3088	<i>Geyda Alexander</i> Models of Information Application for Activity

3092	<i>Sabbry Nawras</i> Digital Signatures in Constrained Environments: A Comparative Security and Performance Analysis of RSA, ECDSA, and EdDSA
3095	<i>Jose K.P., Binumon Joseph</i> Optimization of N-policy in a k-out-of-n Reliability System with Unreliable Server Extending Service to External Customers
3117	<i>Zuev Sergei, Nozdracheva Anna, Rybak Larisa</i> On Optimisation of Control Actions to Inhibit a Viral Infection Spreading According to the SEIR Model
3120	<i>Bazylev Dmitry</i> Sensorless control algorithm for synchronous motors with fixed-time state observer
3121	<i>Klimenko Anna, Barinov Arseniy</i> A technique of distributed optimization problem solving for dynamic computing environments
3146	<i>Zhdanov Viktor, Galkina Daria, Konovalov Dmitry, Kremlev Artem, Zimenko Konstantin</i> On homogeneous observers for linear systems
3155	<i>Podoprosvetov Aleksei, Smolin Vladimir, Malinetsky Georgy</i> The Necessity of Using Technical Analogues of Thinking and Consciousness for the Creation of AGI
3171	<i>Serov Vladimir, Trubienko Oleg, Skaev Sarmat, Tepsikoev Soltan</i> Evolutionary Computational Technology for a Heterogeneous Coalitions Multi-criteria Formation in Network-Centric Systems

**Track 2  
Robotics**

<b>Paper ID</b>	<b>Authors</b>
2411	<i>Diveev Askhat, Sofronova Elena</i> Machine Learning Control by Symbolic Regression for Stabilisation System of Motion along Spatial Trajectory
2554	<i>Gao Tianci</i> Transformer-XL for Long Sequence Tasks in Robotic Learning from Demonstrations
2808	<i>Wu Guo, Sherezhev Madin, Serebrenny Vladimir</i> Comparison of Task Allocation Methods for Human-Robot Collaboration Systems in Aircraft Manufacturing Industry
3007	<i>Gorkavyy Mikhail, Voroshchenko Vasilii, Ivanov Yuriy</i> Research of the impact of trajectory algorithms interpolation on energy efficiency and operation execution time for collaborative robots

3023	<i>Vashchenko Anna, Frolov Oleg, Safin Ramil, Tsoy Tatyana, Martinez-Garcia Edgar, Magid Evgeni</i> UAV swarm control with operator-leader-followers approach
3048	<i>Iureva Radda, Margun Alexey, Zimenko Konstantin</i> Application of Machine Learning for Twin Rotor MIMO System Identification
3054	<i>Zuev Sergei, Rybak Larisa, Polyakov V.M., Narendra Kumar Dhar, Santu Shit, Cherkasov V.V.</i> Multicriteria optimization of the robot's territory processing trajectory
3057	<i>Margun Alexey, Bzhikhatlov Islam, Zhdanov Viktor</i> Diagnostics of systems with arbitrary relative degree and immeasurable input
3059	<i>Kokoulin Andrey, Kokoulin Rostislav</i> Methods of objects recognition system enhancement in computer vision
3082	<i>Gromov Ivan</i> A neural network approach to longitudinal vehicle acceleration control
3139	<i>Ivanov Yuriy, Ilchenko Elizaveta, Grabar Daniil, Zhiganov Sergey, Gorkavyi Mikhail</i> Improving Safety in Collaborative Robotic Systems through Multimodal Emotion Recognition
3151	<i>Daryina Anna</i> The principle of trajectories separation for the optimal control problem in a feedback system
3153	<i>Tolok Alexey, Tolok N.B.</i> The algorithm of gradient movement towards the target by the method of functional voxel modeling
3154	<i>Bazylev Dmitry, Margun Alexey, Iureva Radda</i> Fault Detection and Isolation for USV with INS using genetic algorithm

**Track 3**  
**AI Tools**

<b>Paper ID</b>	<b>Authors</b>
2680	<i>Yashina Marina, Susoev Nikolay</i> Deterministic-stochastic approach for studying the characteristics of traffic flows at road intersection
2692	<i>Kolmogorova Svetlana, Pavlov Vadim, Ivanov Sergey, Romanov Nikita</i> Design of an intelligent system for monitoring environmental metrics
2822	<i>Zatsarinny Alexander, Shabanov Alexander</i> Models for intelligent management telecommunications into transport logistics of data economy

3148	<i>Gabdrakhmanova Nailia, Pilgun Maria</i> Intelligent Systems for Urban Planning: Well-being and Residents' Perception
2596	<i>Shichkina Yulia, Muon Ha, Danting Ma</i> The Importance of Considering the Human Condition in Systems Designed on the Basis of the Concept of Co-evolutionary Hybrid Intelligence
2667	<i>Poleshchenko Dmitry, Mikhailov Iliia, Petrov Vladislav</i> The Use of Neural Networks Based on the YOLO Architecture to Automatically Determine Indicators of Crop Growth Using Photographs Taken from UAVs
2770	<i>Bosov Alexey, Ivanov Alexey</i> One Approach to Mathematical E-Learning Systems Content Generation
2790	<i>Zhuravlev Anton, Andrikov D.A.</i> Research Of Screw Compressor Operation Using Vibration Signal Conversion and Artificial Intelligence Systems
2791	<i>Sinitsyn Igor, Sinitsyn Vladimir, Korepanov Eduard, Konashenkova Tatyana</i> Wavelet neural networks for linear stochastic system mean square error synthesis
2721	<i>Korchagin Valeriy, Kovshov Evgeny, Kuvshinnikov Vladimir</i> Artificial neural networks in non-destructive testing and evaluation: a novel approach to radiographic inspection
2799	<i>Gavriliev Erchimen, Avdeenko Tatiana</i> Intelligent System for Software Developer Competence Assessment Based on Fuzzy Logic and Data Mining
2803	<i>Bureneva Olga</i> Bit-Stream Perceptron
2828	<i>Dorofeev Nikolay, Sharapov Ruslan, Goryachev Maxim</i> Predicting Health Status Based on Human Gait Parameters Using a Smartphone
2922	<i>Izrailov Konstantin, Buinevich Mikhail, Kotenko Igor</i> Intelligent detection of cyber attacks on electrical power systems based on simulation and graph-based modeling
2986	<i>Devyatkin Daniil</i> Data quality estimation using Machine Learning approach and statistical metric
2990	<i>Kotenko Igor, Melnik Maxim, Abramenko Georgii</i> Detecting Anomalies in Containerized Systems: Applying Frequency Analysis to Network Packet Payloads Using AE-LSTM Hybrid Neural Network
3006	<i>Shanarova Nadezhda, Lipkovich Mikhail, Pronina Marina, Knyazeva Veronika, Sagatdinov Artur, Aleksandrov Aleksander, Kropotov Juri, Ponomarev Valery</i> Software Framework for EEG Signals Analysis Using Machine Learning Methods

3017	<i>Denisov Maksim, Chebotarev Petr</i> Automated neural-network-based decision support system for forecasting mechanical properties of aluminum alloys
3028	<i>Dostovalova Anastasia, Gorshenin Andrey</i> Quadtree-Based Graph Convolutional Networks for Small Object Segmentation
3041	<i>Trubacheev Boris, Levina Alla</i> Training Neural Networks on Color-Space Reduced Images and Using Wavelet Transforms to Reduce Training Losses
3052	<i>Lavanya M. S., Vanishri Arun, Mayura Tapkire, Shichkina Yulia</i> A Review on Facial Expression Recognition Approaches, Datasets and Technologies.
3056	<i>Nozdracheva Anna, Nozdrachev Alexey, Rybak Larisa, Cherkasov Vladislav, Malyshev Dmitry</i> An Open Source Laboratory Information Management System for Biobank Optimization in a Robotic Environment
3070	<i>Mantserov Sergey, Lomakina Lyubov</i> Intellectualization of quality management and environmental safety of technical facilities based on an open system of high-tech computing models
3090	<i>Selvesyuk Nikolay, Chekin Andrei, Novikov Valeriy, Proshunin Aleksandr, Semenov Mikhail, Solovyov Andrey</i> Development of software and algorithmic support for the navigation function in terms of controlling the executive systems of the Small and Medium Capacity aircraft at the stage of movement along the airfield
3091	<i>Sobolevskii Vladislav</i> AutoML platform for creating automatic monitoring systems
3093	<i>Latypova Viktoriya</i> Support for Decision-Making in Assigning Code Reviewers
3097	<i>Tuan Minh Nguyen, Samsonovich Alexei</i> Developing a General-Purpose System for Intentionality Detection in Dialogue Using Neural Networks
3116	<i>Kurbanov Sinan, Andrikov Denis, Khramov Alexander</i> Algorithms of ECG time series processing in EDF-format
3130	<i>Albychev Alexander, Chervyakov Alexander, Gazanova Nurziia, Ilin Dmitry, Nikulchev Evgeny</i> Machine learning methods for deadline missing prediction using national project checkpoint data
3143	<i>Iureva Radda, Bazylev Dmitry, Margun Alexey</i> Fast Gradient Sign Method Attack on Machine Learning Model in Time Series Analysis of Autonomous Underwater Vehicles
3144	<i>Latypova Viktoriya</i> Intelligent Decision Support System for Online Teachers in Controlling Quality of Fulfillment of Free Response Assignments Based on Educational Data Mining

3237	<i>Ksemidov Boris, Abgaryan Karine</i> Automated generation of educational video material
3228	<i>Abgaryan Karine, Gavrilov Eugeny</i> Automation systems for scientific calculations for multiscale modeling of composite materials
3202	<i>Belotelov Vadim</i> Curve restoration for a window-filtered trajectory
3218	<i>Otradnov Konstantin, Zhukov Dmitry</i> Solving boundary value problems based on a fractional differential equation of diffusion type with arbitrary values of the orders of the derivatives

**Workshop on software and applied solutions for artificial intelligence**

**Школа-семинар «Программное обеспечение и решения для систем искусственного интеллекта»**

<b>Paper ID</b>	<b>Authors and title of the report</b>
2880	<i>Чурбанов Роман</i> Автоматизация построения отчетов по данным сайтов недвижимости НИУ ВШЭ, г. Москва
2951	<i>Манцеров Сергей, Ломакина Любовь</i> Интеллектуализация управления качеством и энергобезопасностью состояний технических объектов на основе открытой системы наукоемких моделей вычислений Нижегородский государственный технический университет им. Р.Е. Алексеева, г. Нижний Новгород
2971	<i>Савенков Павел, Волошко Анна, Ивутин Алексей, Крюков Олег</i> Формирование многофакторного вектора индивидуальных признаков на основе бинарной и многозначной классификации Тульский государственный университет, г. Тула
3089	<i>Шлепаков Пётр</i> О реализации некоторых когнитивных функций человека в общей ресурсно-целевой балансовой модели Алеф-куб Aleph.Soft LLC
3119	<i>Бычкова Кристина, Подкопаев Антон, Нечаев Олег, Шевцова Анастасия</i> Повышение эффективности системы мониторинга показателей состояния безопасности дорожного движения Белгородский государственный технологический университет им. В.Г. Шухова, г. Белгород



3124	<p><i>Албычев Александр, Червяков Александр, Газанова Нурзия, Ильин Дмитрий, Никульчев Евгений</i></p> <p>Интеллектуальные инструменты прогнозирования сроков выполнения контрольных точек национальных проектов</p> <p>МИРЭА – Российский технологический университет, г. Москва Федеральное казначейство Министерства финансов Российской Федерации, г. Москва</p>
3149	<p><i>Шапаренко Н., Жиленков Антон, Серный Сергей</i></p> <p>Адаптация технологии шифрования данных методами ИИ на базе ARM платформы</p> <p>Санкт-Петербургский государственный морской технический университет, г. Санкт-Петербург Херсонский технический университет, г. Херсон</p>
3199	<p><i>Гейда Александр</i></p> <p>Модели использования информации в деятельности</p> <p>Санкт-Петербургский Федеральный исследовательский центр РАН, г. Санкт-Петербург</p>
3201	<p><i>Царева Полина</i></p> <p>Исследование возможностей применений систем искусственного интеллекта для ускорения расчетов в вычислительной гидродинамике</p> <p>Санкт-Петербургский государственный морской технический университет, г. Санкт-Петербург</p>
3222	<p><i>Колесникова Ирина</i></p> <p>О вариационном принципе для эволюционных дифференциально-разностных операторов</p> <p>Российский университет дружбы народов, г. Москва</p>