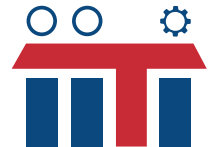# 6th INTERNATIONAL SCIENTIFIC CONFERENCE

"INTELLIGENT INFORMATION TECHNOLOGIES FOR INDUSTRY"

IITI'22

October 31 – November 6 2022
Istanbul, Turkey

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Rostov State Transport University (Russia)
Southern University (Russia)
Russian Association for Artificial Intelligence (Russia)
EURAS (Eurasian Universities Union)
IAU Istanbul Aydın University (Turkey)
(RABE) Russian Association of Business Education (Russia)

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- Yakup Çelikbilek, Istanbul Aydin University, Turkey
- Yuri I. Rogozov, Southern Federal University, Russia
- Zafer Aslan, Istanbul Aydin University, Turkey

VENUE
All conference sessions will be held at:

Beşyol Mahallesi , İnönü Caddesi N 38, PK: 34295
Küçükçekmece / Istanbul , Turkey
İstanbul Aydın University;
Halit Aydın Campus.

Rooms
Technical sessions
Tuesday, November 1, 09:00 – 15:00, Hall 1
Wednesday, November 2, 9:00 – 12:00, Hall 1 and Hall 2
Thursday, November 3, 9:00 – 12:00, Hall 1 and Hall 2

PROGRAMME

Monday, October 31

Arrival Day

Tuesday, November 1

09.00 - 09.30	Registration at Istanbul Aydin University
09.00 - 10.00	*Opening session (Hall 1).* Prof. Dr. Yadigar izmirli Prof. Imran Akperov Prof. Sergey Kovalev, Ass. Prof. Mustafa Aydin
10.00 - 11.00	*Intelligent systems for medicine: retrospective and perspective* **Prof. Boris Kobrinskii** The Federal Research Center "Computer Science and Control" of Russian Academy of Sciences, Problem Artificial Intelligence Institute, Russia
11.00 - 12.00	*Medical Artificial Intelligence Applications* **Prof. Dr. Ali Okatan** Istanbul Aydin University, Istanbul, Turkey
12.00 - 13.00	*Lunch*
13.00 - 14.00	*Models and methods of visual analytics: application for cybersecurity* **Prof. Igor Kotenko** St. Petersburg Federal Research Center of the Russian Academy of Sciences, Russia
14.00 - 15.00	*Development of AI research in Russia* **Prof. Vadim Stefanuk** Institute for Information Transmission Problems and Peoples' Friendship Russian University, Russia
15.00 - 15.15	*Coffee Break*
15.15 - 16.15	*The impact of Disruptive Technologies, Industrial Internet of Things* **Asst. Prof. Dr. MHD Wasım Raed** Istanbul Aydin University , Istanbul, Turkey

PROGRAMME

Wednesday, November 2

09.00 - 11.00	*Session 1 (Hall 1). Decision Making Intelligent Systems* Chair: Asst. Prof. Dr. Semih Yön, Prof. Dr. Mustafa Nafiz Duru 1. Knowledge Bases Engineering Based on Event Trees Transformations: A Case Study for Aircraft Diagnostics **Aleksandr Yurin, Olga Nikolaychuk, Nikita Dorodnykh, Aleksandr Stolbov, Yuriy Kotlov and Vladimir Popov** 2. Architecture of a Distributed Intelligence System for Data Mining Based On Case-Based Reasoning **Alexander Eremeev, Pavel Varshavskii and Sergey Polyakov** 3. Category Technology to Design Intelligent Systems for Complicated Decisions **Alexander Zhozhikashvili and Vadim Stefanuk** 4. Communication as a basic element of the methodology for the development of intelligent systems **Yuri Rogozov, Vyacheslav Lapshin and Kucherov Sergey** 5. Approach to the implementation of intelligent Low-Code platforms **Yuri Rogozov, Vyacheslav Lapshin and Borovskaya Marina** 6. Collaborative Decision Support with Ontology-Based Neuro-Symbolic Artificial Intelligence: Challenges and Conceptual Model **Alexander Smirnov, Andrew Ponomarev and Nikolay Shilov** 7. Integration of Intelligent and Mathematical Technologies for Decision Support in Research and Ensuring Energy Resilience **Liudmila Massel, Timur Mamedov and Aleksei Massel** 8. Patterns in Smart Wireless Sensor Network Nodes **Gennady.P. Vinogradov, Igor.A. Konyukhov** 9. Intelligent Recommender System for Spatial Analysis **Stanislav Belyakov, Alexander Bozhenyuk, Igor Dolgiy and Margarita Knyazeva** 10. Identification of generalized Euclidean N-dimensional information space of modeling and decision-making of a specialist **Nikolay Liabakh, Maksim Kolesnikov, Maksim Bakalov and Vyacheslav Zadorozhny**

PROGRAMME

Wednesday, November 2

	Session 2 (Hall 2). Machine Learning and its Applications Chairs: Assoc. Prof. Andrey Chechulin, Prof. Dr. Ali Okatan
09.00 - 11.00	1. Detection of anomalies and attacks in container systems: an integrated approach based on black and white lists **Igor Kotenko, Igor Saenko, Andrey Chechulin, Lidia Vitkova, Maxim Kolomeec, Igor Zelichenok, Maxim Melnik, Denis Makrushin and Nikita Petrevich** 2. Comparison of Advance Machine Learning Techniques in River Flow Rate Prediction, **Buket K. İşler, Uğur Akbulut, Zafer Aslan** 3. Frequent pattern discovery as table constraint satisfaction problem **Alexander Zuenko and Olga Zuenko** 4. Methodology for detecting anomaly and attack on cloud infrastructure instances **Igor Pestov and Lidia Vitkova** 5. Sift Descriptor for Social Media User Accounts Matching **Anastasia Korepanova and Maxim Abramov** 6. Draft-based learning model to discover data from a cognitive causal model **Alexander Tselykh, Vladislav Vasilev and Larisa Tselykh** 7. Modeling Mechanical Properties of Coatings Based on Machine Learning Methods **Vladimir Kolesnikov, Olga Belyak, Tatiana Suvorova, Alexander Guda and Danil Pashkov** 8. Synthesis of estimation system for uav orientation with a neural network-identifier **Andrey Kostoglotov, Anton Penkov and Vladimir Zekhtser** 9. Hybrid approach to time series anomaly detection using LSTM networks and ontology **Vadim Moshkin, Nadezhda Yarushkina, Dmitry Kurilo and Alaxander Dyrnochkin**
11.10 - 11.30	*Coffee Break*

PROGRAMME

Wednesday, November 2

11.30 - 12.00	*Session 3 (Hall 1). Flexible models of management over socio-technical systems* Chair: Asst Prof Dr. Kenan Kaya 1. Hourly Wind Speed Prediction by Machine Learning **Rafael Bakırov, Zafer Aslan, Sibel Ş. Menteş** 2. Making Intelligent Manufacturing Decisions with Disruptive Technologies **Semih Yön** 3. Intelligent scoring of publication activities and personal share of co-authorship in the decision support system for rewarding university employees **Irina Dergacheva** 4. Influence-based matrix reconstruction method **Alexander Tselykh, Vladislav Vasilev and Larisa Tselykh** 5. Identification of predictors for estimation the intensity of relationships between users of online social networks **Anastasiia Khlobystova, Maxim Abramov, Anastasiia Korepanova and Nikita Liapin**
11.30 - 12.00	*Session 4 (Hall 2). Intelligent medical systems* Chairs: Prof. Dr. Ali Okatan, Prof. Dr. Ayşegül Kaptanoğlu 1. Information Granulating and its Use in Descriptive and Predictive Analysis of Medical Data **Tatiana Afanasieva** 2. Analysis of micro-images of skin neoplasms using convolutional neural networks in an intelligent medical information system for the early diagnosis of melanoma **Gleb Guskov, Nadezhda Yarushkina, Elena Antonova, Anastasia Khambikova and Anton Sapunkov** 3. Data Mining Approach to Characterization of Bioactive Inorganic Scaffold Properties using Synthetic Images **Oleg Kartashov, Ilias Savvas, Elizaveta Mukhanova, Dmitry Polyanichenko, Andrey Chernov and Maria Butakova** 4. Expert System for The Diagnosis of Orphan Diseases **Boris A. Kobrinskii, Nikolay A. Blagosklonov, Valeriya V. Gribova and Elena A. Shalfeeva** 5. Methods and Aproaches for Predicting Speech Impairment after Brain Tumor Surgery **Ida Alushaj, Aleksey Molodchenkov and Andrey Bykanov**

PROGRAMME

Thursday, November 3

09.00 – 11.00	*Session 5 (Hall 1). Automation and Intellectualization for Industrial, Transport and Energetic Systems* Chairs: Prof. Igor Kotenko, Prof. Dr. Hasan Alpay Heperkan 1. Learning Adaptive Parking Maneuvers for Self-Driving Cars **Gregory Gorbov, Mais Jamal and Aleksandr Panov** 2. Attacks against Artificial Intelligence Systems: Classification, the Threat Model and the Approach to Protection **Igor Kotenko, Igor Saenko, Oleg Lauta, Nikita Vasiliev and Ksenya Kribel** 3. Acyclic Structures of Transport Processes in Transportation Management Problems **Alexander N. Guda and Vera V. Ilicheva** 4. Knowledge Graph Augmentation Based on Tabular Data: A Case Study for Industrial Safety Inspection **Nikita Dorodnykh and Aleksandr Yurin** 5. Reconstruction of 3D Semantic Map and Its Quality Estimation **Vitaly Bezuglyj and Dmitry Yudin** 6. Evolution Management of Multistage Manufacturing Based on Evidence Theory and Methods of Interval Analysis **Boris Paliukh and Alexander Vetrov** 7. An approach to data mining of software repositories in terms of quantitative indicators of the development process and domain features **Aleksey Filippov, Anton Romanov and Dmitrii Iastrebov** 8. Intelligent models for state assessment and behavior prediction in railway processes based on descriptive analytics and soft computing **Alexander Dolgiy, Anatoly Khramtsov and Sergey Kovalev** 9. Terminal stochastic filtering of nonlinear dynamic processes: the case of invariant immersion **Sergey Sokolov, Agop Khatlamadzhiyan, Arthur Novikov, Marianna Polyakova and Dmitriy Demidov** 10. Control of SRM of flywheel energy storage drive **Pavel G. Kolpakhchyan, Sergey Pakhomin, Alexander E. Kochin, Alexey R. Shaikhiev, Margarita S. Podbereznaya and Georgy Nazikyan**

09.00 – 11.00	11. Development of a Model of User Interface Logic Representation **Yulia Lipko, Alexander Sviridov, Svetlana Belikova and Alexander Belikov**
09.00 – 11.00	*Session 6 (Hall 2). Fuzzy logic and non-classical logics* Chairs: Prof. Dr. Kürşad Melih Güleren 1. Intelligent support for the interaction of transport process participants using fuzzy modeling **Maksim Bakalov, Nikolay Lyabakh, Vladimir Vereskun and Vyacheslav Zadorozhniy** 2. Ontological engineering of interrelated processes in complex cyber-physical systems **Vadim Borisov and Anton Misnik** 3. Mathematical models and algorithms of an intelligent platform for the implementation of an individual learning trajectory **Sakharova Luydmila, Gurru Akperov, Anna Artamonova and Vladimir Khramov** 4. Mapping out the Measures to Prevent the Failure of Electrical Equipment **Anna Kolodenkova, Svetlana Vereshchagina, Victoria Dobrova, Evgenia Muntyan and Ivan Olgeizer** 5. Synthesis of a Quasi-Optimal Control System Using the Maximum Condition of Generalized Power Under Fuzziness of Operation Modes' Boundaries **Sergey Lazarenko and Andrey Kostoglotov** 6. Complex modeling of inductive and deductive reasoning by the example of a planimetric problem solver **Sergey Kurbatov and Igor Fominykh**
11.10 - 11.30	*Coffee Break*

PROGRAMME

Thursday, November 3

11.30 - 12.00	*Session 7 (Hall 1). Bayesian Networks and Trust Networks, Fuzzy-Stochastic Modelling* **Chair: Assoc Prof Dr. Yakup Çelikbilek, Prof. Dr. Ersin Arslan** 1. Probabilistic graphical models with continuous variables for the decision making about risky episodic behavior in the framework of gamma Poisson model with application to public posting data **Valeriia Stoliarova and Alexander Tulupyev** 2. BERT and ELMo in Task of Classifying Social Media Users Posts **Valerii D. Oliseenko, Michael Eirich, Alexander L. Tulupyev and Tatiana V. Tulupyeva** 3. The Learning of Fuzzy Models Based on the Fuzzy Bayesian Approach **Vadim Borisov, Elena Luferova, Victor Luferov and Andrey Sukhanov**
11.30 – 12.00	*Session 8 (Hall 2). Bioinspired systems* **Chair: Prof. Dr. Ali Güneş** 1. Optimal Design of Conventional and Freeform Optical Systems with Memetic Mind Evolutionary Computation Algorithm **Maxim Sakharov, Thomas Houllier and Thierry Lépine** 2. Development and research of a hybrid algorithm for placement of elements of digital computing equipment **Leonid Gladkov, Nadezhda Gladkova and Muhanad J. Yaser** 3. An approach to fusing strategic objectives into agent-level decision making in load balancing **Valerii Zakharov and Dmitrii Murashov**
12.00 – 12.10	*Closing session*
14.00 – 17.00	*Roundtable discussion (Hall 1). "Intelligent information models in socio economical systems"* **Chairs: Prof. Dr. Sergey Kovalev, Prof. Dr. Imran Akperov, Prof. Dr. Sergey Myasoedov, MBA Natalia Evtikhieva, Prof. Dr Ramazan Korkmaz , Assos. Prof. Mustafa Aydin**