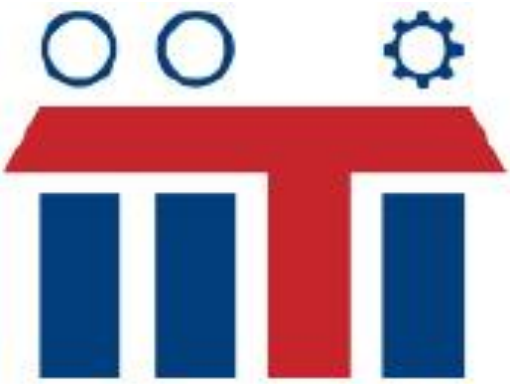
SECOND INTERNATIONAL SCIENTIFIC CONFERENCE

"INTELLIGENT INFORMATION TECHNOLOGIES FOR INDUSTRY"

IITI2017

PROGRAM



SEPTEMBER 14-16, 2017, VARNA, BULGARIA

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PROGRAM

Thursday, September 14

09:30 – 14:00	**Registration in Hotel "Estreya"**
14:00 – 14:15	**Opening Session. Prof. Kovalev, Prof. Snasel, Prof. Vasilev**
14:15 – 16:50	**Plenary Talks. Chairs: Prof. Sergey Kovalev, Prof. Rosen Vasilev**
14:15 – 14:50	**Synergetic Artificial Intelligence and Social Robotics** **Assoc. Prof. Valery B. Tarassov,** Bauman Moscow State Technical University, Moscow, Russia **Assoc. Prof. Valery E. Karpov,** Russian Research Center "Kurchatov Institute", Moscow, Russia
14:50 – 15:25	**Application of Intelligent Data Analysis Methods for Information Security Problems** **Prof. Vadim N. Vagin** Moscow Power Engineering Institute, Moscow, Russia
15:25 – 15:40	**Coffee Break**
15:40 – 16:15	**Cognitive Generator to Interpret Fuzzy Values** **Prof. Vadim L. Stefanuk** Institute for Information Transmission Problem, Moscow, Russia
16:15 – 16:50	**An Approach to Sensitivity Analysis of Inference Equations in Algebraic Bayesian Networks** **Prof. Alexander L. Tulupyev** St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences. St. Petersburg, Russia
16:50 – 17:30	**New experimental results of VSEP algorithm for graph automorphism group** **Prof. Stoicho Stoichev** Technical University of Sofia, Sofia, Bulgaria
19:30	**Official Dinner** **Restaurant "Kopitoto" - St.St. Konstantin and Helena resort**

Friday, September 15

09:00 – 9:30	**Session 1. Data Mining and Knowledge Discovery in Intelligent Information and Control Systems.** **Chairs: Prof. Vaclav Snasel, Prof. Alexander N. Guda** 1. Ladislav Zjavka and Václav Snášel: Wind speed NWP local revisions using a polynomial decomposition of the general partial differential equation 2. Todor Ganchev, Valentina Markova, Ivelin Lefterov and Yasen Kalinin: Overall Design of the SLADE Data Acquisition System 3. Jasmina Novakovic, Alempije Veljovic, Sinisa Ilic and Vladimir Veljovic: Improving the Accuracy of SVM Algorithm in Classification Problems with PCA Method 4. Alexander P. Eremeev and Alexander A. Kozhukhov: Methods and program tools based on prediction and reinforcement learning for the intelligent decision support systems of real-time 5. Alexander N. Tsurikov and Alexander N. Guda: Practical Application of the Original Method for Artificial Neural Network's Training 6. Evgeny A. Leonov, Yuri A. Leonov, Yuri M. Kazakov, Lyudmila B. Filippova: Intellectual subsystems for collecting information from the Internet to create knowledge bases for self-learning systems 7. Antonina Komarova, Alexander Menshchikov, Alexander Negols, Anatoly Korobeynikov, YurijGatchin and Nina Tishukova: Comparison of Authentication Methods on Web Resources 8. Boris Sokolov, Dmitry Verzilin, Tatiana Maximova and Irina Sokolova: Dynamic Models of Self-Organization through Mass Behaviour in Society 9. Alexander Afanasyev, Nikolay Voit, Oksana Timofeeva and Vyacheslav Epifanov: Analysis and control of hybrid diagrammatical workflows 10. Alexander Afanasyev, Nikolay Voit, Maria Ukhanova and Irina Ionova: Analysis of design-technology workflows in the conditions of large enterprise 11. Pavel V. Saraev, Semen L. Blyumin, Alexander V. Galkin and Anton S. Sysoev: Neural remodelling of objects with variable structures 12. Andrey Kostoglotov, Sergey Lazarenko, Igor Deryabkin, Oksana Kuznetcova and Alexey Yachmenov: Combined maximum principle as the basis of intellectualization of control systems for a suspension of vehicles

9:30 – 11:00	**Session 4. Fuzzy Graphs, Fuzzy Networks and Fuzzy Inference for Planning and Cognitive Modeling** **Chairs: Prof. Vadim L. Stefanuk, Prof. Sergey M. Kovalev** 1. Maria Butakova, Andrey Chernov and Alexander Guda: Algorithms of sequential pattern generation with noise using stochastic and fuzzy models 2. Igor Kotenko, Igor Saenko and Sergey Ageev: Fuzzy Adaptive Routing in Multi-Service Computer Networks under Cyber Attack Implementation 3. Tatiana Afanasieva: About Transformations of a Numerical Time Series using a Linguistic Variable 4. Sergey Kovalev, Andrey Sukhanov and Sergey Sokolov: Adaptive Approach for Anomaly Detection in Temporal Data Based on Immune Double-plasticity Principle 5. Natalia Filatova, Konstantin Sidorov and Pavel Shemaev: Prediction properties of attractors based on their fuzzy trend 6. Michal Prílepok and Tomas Vantuch: Partial Discharge Pattern Classification Based on Fuzzy Signatures 7. Tomas Vantuch, Marek Lampart and Michal Prílepok: An Examination of Complexity of Partial Discharge Pattern 8. Alexey Lyashchenko, Zoya Lyashchenko and Vladimir Ruban: The Hybrid Model of The Weakly Formalized Dynamic Process Based on The Fuzzy Production System 9. Alexander Lepskiy and Artem Suevalov: Application of Fuzzy Asymmetric GARCH-Models to Forecasting of Volatility of Russian Stock Market 10. Pavel V. Dudarin and Nadezhda G. Yarushkina: An approach to fuzzy hierarchical clustering of short text fragments based on fuzzy graph clustering 11. Vasiliy Sinuk and Vladimir Polyakov: Comparative Analysis of the Inference Methods Based on the Fuzzy Truth Value for the MISO-Structure Systems 12. Alexander Bozhenyuk, Stanislav Belyakov, Margarita Knyazeva and Igor Rozenberg: Optimal Allocation Centers in Second Kind Fuzzy Graphs with the Greatest Base Degree 13. Andrey Kostoglotov, Sergey Lazarenko, Igor Deryabkin, Igor Pugachev, Zoya Lyashchenko and Alexander Kuzin: Fuzzy control laws in the basis of solutions of synthesis problems of the combined maximum principle 14. Gerald Plesniewicz: A fuzzy propositional logic with temporal intervals
11:00-11:20	**Coffee Break**

11:20-13:00	**Session 11. Applied Systems** **Chairs: Assoc. Prof. Marinela Yordanova, Assoc. Prof. Mediha Mehmed-Hamza** 1. Iliya Hadzhidimov and Emil Rosenov: Sensing thermal processes with Piezoelectric Film Elements 2. Neli Dimitrova, Nikolay Nikolov, Anton Georgiev and Margreta Vasileva: Reliability Estimation of Electricity Distribution Substation Surge Protection System Composed by Surge Arresters with Different Operational Parameters 3. Victor A. Chirikov: Approximate Solutions of Timoshenko's Differential Equation for The Free Transverse Vibration of Stubby Beams 4. Marinela Yordanova and Mediha Mehmed-Hamza: A Computing Approach to Risk Assessment Related to Electromagnetic Field Exposure from Overhead Power Lines 5. Veneta Aleksieva and Aydan Haka: Modified Scheduler for Traffic Prioritization in Lte Networks 6. Hristo Valchanov and Simeon Andreev: Multithreaded hybrid library 7. Valentin Gyurov and Yuliyan Yordanov: Opportunities for application of TCSC in low voltage power supply systems as technical solution for improving of power quality 8. Tatyana Zhekova, Anna Simeonova and Nikolay Nikov: Simulation Modeling of Stormwater Sewage Discharge and Dispersion in The Bulgarian Black Sea Coastal Waters 9. Emil Panov, Mediha Mehmed-Hamza and Marinela Yordanova: A Computing Approach for Determination of the Magnetic Flux Density under Transmission Power Lines 10. Todorka Georgieva, Siyka Demirova and Penka Zlateva: An Approach for Monitoring Transport and Delivery Chain of Liquid Fuels in Bulgaria 11. Emil Panov: On the Electrodynamics of Moving Bodies According to the Rotary Theory 12. Emil Panov: On the Electromagnetic Radiation from a Short Electric Dipole According to the Rotary Theory 13. Nikolay Nikolaev: Verification of SVD Based Algorithm for Voltage Stability Assessment Against Other Methods 14. Nasko Atanasov, Zhivko Zhekov, Ivan Grigorov and Mariela Alexandrova: Application of principal component analysis for fault detection of DC motor parameters 15. Valentina Markova, Kalin Kalinkov, Petar Stanev and Todor Ganchev: Automated Stress Level Monitoring in Mobile Setup 16. Lacezar Licev, Jakub Hendych, Radim Kunčický, Kateřina Kovářová and Ivana Kumpová: Evaluation of Sandstone Internal Structure with Application of Micro-CT and FOTOM System

	17. Julia Garipova, Anton Georgiev, Toncho Papanchev, Nikolay Nikolov and Dimitar Zlatev: Operational Reliability Assessment of Systems Containing Electronic Elements 18. Pavel G. Kolpakhchyan, Alexander E. Kochin and Alexey R. Shaikhiev: Sensorless control of the high-speed switched-reluctance generator for the steam turbine 19. Plamen Stoianov: Design and implementation of high speed AES on a RISC microcontroller 20. Stoyan Slavov: An algorithm for generating optimal toolpaths for CNC based ball-burnishing process of planar surfaces 21. Ekaterina Dimitrova, Dimitar Kovachev and Vencislav Valchev: Improvement aspects in Teaching Analog Electronics 22. Mediha Mehmed-Hamza, Margreta Vasileva and Plamen Stanchev: Increasing the Education Quality by Means of Computer-Aided Visualization of the Processes in Electric Power Systems 23. Yulian Rangelov, Nikolay Nikolaev, Yoncho Kamenov and Krum Gerasimov: Project of experimental complex for power system stability studies 24. Krastin Yordanov, Tatyana Mechkarova, Aneliya Stoyanova and Penka Zlateva: Determination of the Temperature of Cathode Unit of Indirect Plasma Burner Through a Computer Simulation Model 25. Krasimira Dimitrova: Modeling, measurement and management of business processes in organization 26. Ivan Grigorov, Nasko Atanasov, Zhivko Zhekov and Mariela Alexandrova: Application of recursive methods for parameter estimation in adaptive control of DC motor 27. Tomas Mrovec, Petr Simonik and Samuel Przeczek: Electronic Differentials with Active Torque Distribution for IWD Vehicles 28. Lucie Svecova, David Vala and Zdenek Slanina: EMG as Objective Method for Revealed Mistakes in Sport Shooting 29. Natalia Pirogova and Igor Neches: Compensation of Nonlinear Distortions in Telecommunication Systems with The Use of Functional Series of Volterra 30. Dimitar Bogdanov, Georgi Dimitrov and Francisco Gonzalez-Longatt: Improving the reliability of busbar protection system with IEC 61850 GOOSE based communication
13:00-14:00	**Lunch**
14:00-15:00	**Session 5. Evolutionary Modeling, Bionic Algorithms and Computational Intelligence.** **Chairs: Prof. Vladimir V. Kureichik, Prof. Sergey V. Sokolov** 1. Daria Zaruba and Dmitry Zaporozhets: Bacterial foraging optimization for VLSI fragments placement 2. Daria Zaruba, Vladimir Kureichik Junior, Vladimir Kureichik,

	Liliya Kureichik and Dmitrii Leschanov: Hybrid approach for VLSI fragments placement 3. Nikolay Nikolaev, Stanislav Yordanov and Rosen Vasilev: An Optimization Algorithm for Simulating Smart-Grid Means for Distribution Grid Balancing 4. Vultchan Gueorgiev: Specifying Optimal Maintenance Factor in internal lighting applications 5. Marianna V. Polyakova, Aleksandra A. Bayandurova and Sergey V. Sokolov: Use of irregular exact measurements in a problem of an adaptive filtration 6. Boris Lebedev, Oleg Lebedev, Ekaterina Lebedeva and Andrey Kostyuk: VLSI Planning Based on the Ant Colony Method 7. Maxim Sakharov and Anatoly Karpenko: A New Way of Decomposing Search Domain in a Global Optimization Problem
15:00-16:00	**Session 7. Probabilistic Models, Algebraic Bayesian Networks and Information Protection** **Chairs: Prof. Igor V. Kotenko, Prof. Alexander L. Tulupyev** 1. Nikita Shindarev, Georgiy Bagretsov, Maksim Abramov, Tatyana Tulupyeva and Alena Suvorova: Approach to identifying employees profiles in websites of social networks aimed to analyze social engineering vulnerabilities 2. Neli Kalcheva, Anna Zagorska, Nikolay Dukov and Kristina Bliznakova: Analysis of suitability of five statistical methods applied for the validation of a Monte Carlo x-ray based software packages 3. Plamen Tsankov and Milko Yovchev: Optimization of the Monte Carlo Raytracing Settings for LED Luminaires Photometric Analysis 4. Ondřej Grunt, Markéta Štáková, Jan Plucar, Tomáš Janečko and Ivan Zelinka: Modeling of Marketing Processes using Markov Decision Process Approach
16:00-16:20	**Coffee Break**
16:20-17:00	**Session 10. Intelligent and Fuzzy Railway Systems** **Chairs: Prof. Sergey M. Kovalev, Prof. Andrey V. Chernov** 1. Sergey Kovalev, Alexander Shabelnikov and Andrey Sukhanov: Dynamic Programming for Automatic Positioning of Wheel Chocks on Marshalling Yards 2. Andrey Chernov, Maria Butakova, Vladimir Vereskun and Oleg Kartashov: Mobile Smart Objects for Incident Analysis in Railway Intelligent Control System 3. Aleksandr Shabelnikov and Nikolay Liabakh: Intellectualization of Sorting Processes based on Instrumental Definition of Analogies 4. Maksim Kolesnikov and Yakov Gibner: Evaluation of the intelligence degree of systems

	5. Vladimir Taran and Vladimir Trofimenko: Transport systems intellectualization based on analytical control synthesis of angular velocities for the axisymmetric spacecraft 6. Alexander N. Guda, Vera V. Ilicheva and Oleg N. Chislov: Executable Logic Prototypes of Systems Engineering Complexes and Processes on Railway Transport 7. Olga Belyak, Alexander Larin and Tatiana Suvorova: Intellectualization of monitoring vibroacoustic characteristics of the permanent way and passing rolling stock 8. Igor Kotenko, Igor Chechulin and Mikhail Bulgakov: Intelligent Security Analysis of Railway Transport Infrastructure Components on the base of Analytical Modeling
17:00-18:00	**Session 8. Image Recognition and Emotion Modeling** **Chairs: Prof. Lačezar Ličev, Prof. Alexander V. Bozhenyuk** 1. Dmitry Yudin and Bassel Zeno: Event Recognition on Images by Fine-Tuning of Deep Neural Networks 2. Ivelina Balabanova, Georgi Georgiev and Stela Kostadinova: Artificial Neural Network for Identification of Signals with Superposed Noises 3. Jakub Hendrych, Radim Kunčický and Lačezar Ličev: New Approach to Steganography Detection via Steganalysis Framework 4. Firgan Feradov, Iosif Mporas and Todor Ganchev: Evaluation of cepstral coefficients as features in EEG-based recognition of emotional states 5. Radek Hrabuska, Veronika Cedivodova, Michal Prauzek, Jaromir Konecny and Jakub Hlavica: Electrical Impedance Distribution in Human Torax: A Modeling Framework 6. Vladimir Rozaliev, Yulia Orlova, Alla Zaboleeva-Zotova and Nikita Nikitin: Automated sound generation by image color spectrum with harmony creation based on user ratings 7. Stanislav Belyakov, Marina Belyakova, Alexander Bozhenyuk and Igor Rozenberg: Transformation of elements of geoinformation models in the synthesis of solutions 8. Egor Pugin, Arkady Zhiznyakov and Alexei Zakharov: Pipes Localization Method Based on Fuzzy Hough Transform

Saturday, September 16

09:00 – 10:30	**Session 9. Hybrid Expert Systems and Intelligent Decision Support Systems in Design and Engineering.** **Chairs: Prof. Alexander P. Eremeev, Prof. Nadezhda G. Yarushkina** 1. Gleb Guskov, Alexey Namestnikov and Nadezhda Yarushkina: Approach to the search for similar software projects based on the UML ontology 2. Galina Rybina, Yuri Blokhin, Elena Sergienko and Victor Rybin: Intelligent support of educational process basing on ontological approach with use of tutoring integrated expert systems 3. Alexander Tselykh, Larisa Tselykh, Vladislav Vasilev and Simon Barkovskii: Expert system with extended knowledge acquisition module for decision making support 4. Aleksey A. Kabanov, Svilen Stoyanov and Ekaterina N. Kabanova Trajectory-Tracking Control of Mobile Robot via Feedback Linearization 5. Rosen Vasilev, Hristo Skulev and Tihomir Dovramadjiev: Optimization of Design Opportunities and Transfer of Information Between Data 3d Graphics Program Blender and Solidworks Cad System For Use in Dental Industry 6. Anatoly G. Korobeynikov, Michael E. Fedosovsky, Igor O. Zharinov, Vladimir I. Polyakov, Anatoly V. Shukalov, Andrey V. Gurjanov and Sergey A. Arustamov: Method for conceptual presentation of subject tasks in knowledge engineering for computer-aided design systems 7. Zdenek Slanina and Tomas Docekal: Energy Meter for Smart Home Purposes 8. Georgy Burdo: Decision Models for Volume Plans in Mechanical Engineering 9. Sanchir Kartiev and Victor Kureychick: Algorithm for building recommendations for intelligent systems 10. Eduard Melnik, Anna Klimenko and Vladimir Korobkin: Reconfigurable Distributed Information and Control System Multiagent Management Approach 11. Lyudmila Borisova, Valery Dimitrov and Inna Nurutdinova: Intelligent System for Technological Adjustment of the Harvesting Machines Parameters 12. Omar Bataineh, Dina Abu Hjeelah and SereenArabiat: Multi-Criteria Decision Making Using AHP to Select the Best CAD Software
10:30-11:30	**Session 3. Ontological Modeling, Semantic Technologies and Knowledge Engineering**

	Chairs: Prof. Viktor M. Kureychik, Prof. Anatoly P. Karpenko 1. Petr Sosnin, Anna Pushkareva and Victor Negoda: Ontological Support of Design Thinking in Developments of Software Intensive Systems 2. Sergey M. Kovalev, Valery B. Tarassov, Alexander I. Dolgiy, Igor D. Dolgiy, Maria N. Koroleva, Agop E. Khatlamadzhiyan: Towards Intelligent Measurement in Railcar On-Line Monitoring: From Measurement Ontologies to Hybrid Information Granulation System 3. Sergey Matorin and Aleksander Zhikharev: Calculation of The Function Objects as The Systems Formal Theory Basis 4. Igor Fominykh and Michael Vinkov: Step theories of active logic and extended logical programs
11:30-11:50	**Coffee Break**
11:50-12:30	**Session 6. Cognitive Technologies on the Basis of Sensor and Neural Networks** **Chairs: Prof. Yuri Rogozov** 1. Emil Marinov and Zhivko Zhekov: Neural Sensorless Control of Induction Motor 2. Nikolay Dukov, Todor Ganchev and Dimitar Kovachev: FPGA implementation of the Locally Recurrent Probabilistic Neural Network 3. Yury Rogozov: Approach to the construction of a systemic concept
12:30-13:00	**Closing Session**

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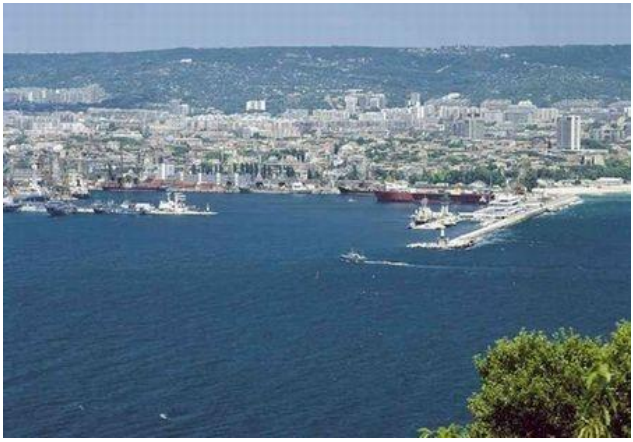

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