The 4th Conference on **Creativity in Intelligent Technologies** & **Data Science**

September 20-23, 2021

Volgograd, Russia

THE CONFERENCE PROGRAM

VOLGOGRAD STATE TECHNICAL UNIVERSITY

http://citds2021.ru/

Springer

Welcome to CIT&DS 2021

Creativity is the powerful engine of humanity to move forward and overcome global challenges in changing environments. Creativity is the process of breaking out of established patterns; it is the reorganization, recombination, or reinterpretation of concepts and ideas for getting something unique and previously unknown in the fast modifying world due to new unforeseen hazards. First, a shift to a new technological paradigm requires a velocity of adaptation to the new reality with the merge of physical and virtual components. Therefore, creativity is probably one of the essential components of humankind, and it becomes more crucial in the new digital Society 5.0. Second, 2020 brings new challenges due to the pandemic, and new normality requires finding novel and non-trivial solutions, which could influence the whole world. So, in this case, artificial intelligence and data science consider as new tools for creativity in the new normality.

Forth Conference on Creativity in Intelligent Technologies and Data Science (CIT&DS 2021) continues the successful series of previous conferences took place in 2019, 2017 and 2015. The main objective of the CIT&DS 2021 is to bring together researchers and practitioners to share ideas in using creativity to theory and practice for design brand new intelligent systems for engineering and decision-making.

CIT&DS 2021 conference focuses on research around the following topics. Section 1 “Artificial intelligence & Deep Learning Technologies for Creative Tasks” includes: Knowledge Discovery in Patent and Open Sources, Open Science Semantic Technologies, IoT & Computer Vision in Knowledge-Based Control. Section 2 “Cyber-Physical Systems & Big Data-driven world” contains: Pro-Active Modeling in Intelligent Decision Making Support, Design Creativity in CASE/CAI/CAD/PDM, and Intelligent technologies in Urban Design& Computing. Section 3 “Intelligent Technologies in Social Engineering” covers the following topics: Data Science in Social Networks Analysis and Cyber Security, Educational Creativity & Game-Based Learning, Intelligent Assistive Technologies: Software Design and Application.

We do hope CIT&DS 2021 will help stimulate your creativity and bring new insights to you.

CIT&DS 2021 Proceedings are published by Springer in their Communications in Computer and Information Science series, Volume 1488.

Venue

The conference on Creativity in Intelligent Technologies & Data Science 2021 is held in Volgograd State Technical University. The University is located in Lenin avenue, 28. In Russian it pronounce “prospect Lenina”.

The Main Building.

The “B” Building. The Conference Hall is located here. All rooms in schedule start from “B-” are located in “B” Building.

If you have an urgent question, do not hesitate to contact organizing committee phone: +7 903 376 26 78

Conference General Co-chairs

Vladimir Lysak

*A*cademician of Russian Academy of Science, scientific supervisor of Volgograd State Technical University, Russia

Igor Kalyaev

*A*cademician of Russian Academy of Science, scientific supervisor of Federal Research Center Southern Scientific Center RAS, Russia

Dmitriy Novikov

*C*orresponding member of Russian Academy of Science, director of Institute of Control Sciences, RAS, Russia

The Program Committee Co-chairs

prof. Alla Kravets, Volgograd State Technical University, Russia

prof. Peter Groumpos, University of Patras, Greece

prof. Maxim Shcherbakov, Volgograd State Technical University, Russia

prof. Danila Parygin, Volgograd State Technical University, Russia

The keynote speakers

Prof. Peter P. Groumpos,

Professor and Director of the Laboratory for Automation and Robotics, Department of Electrical and Computer Engineering Technology, University of Patras, Greece groumpos@ece.upatras.gr

THE META COVID-19 PANDEMIC PERIOD: A DATA SCIENCE DRIVEN WISE FUTURE PLANET?

The COVID-19 pandemic is a sign of how vulnerable and fragile our world is. The virus has upended societies, put the world's population in grave danger and exposed deep inequalities. Data have been generated since the Ancient times. A historical review of the of the data information explosion landscape is very interesting. A new scientific area has emerged due to the big number of data been generated every day: The Big Data Driven World (BDDW) dominates all planet's activities. The arrival of COVID-19 has complicated the BDDW. Creating new knowledge has always been a challenging issue. The role of BDDW in creating the new knowledge is important and briefly explained. The need to differentiate between knowledge and wisdom is dictated by the BDDW. New "Wise Knowledge" (WK) and the "Wise Data Science" (WDS) scientific field are formulated and defined for the first time. A new generic decision making algorithm is proposed for generating the WK and the WDS. The way to build in the future a "Wise Planet driven by Data Science" based on the "Wise Data Science" and "Wise Knowledge" is provided for the first time. Finally, how to avoid the new phenomenon "*My Current Knowledge, my Tomorrow's Delusion?!*" is stressed.

Short Bio. *Prof. Peter P. Groumpos was born in Greece at the small town of Xylocastron. At the age of 18 years old, he went to USA with the primary goal to do his University studies. He did his undergraduate and graduate studies at the Department of Electrical and Computer Engineering at the SUNYAB. In 1980, he moved as an Assistant Professor at Cleveland State University and in 1985, was promoted to Associate professor. In 1990, he returned to his motherland Greece, as a full Professor at the Department of Electrical and Computer Engineering of the University of Patras. In 1991 he established the Laboratory for Automation and Robotics to which has been since then, its Director. A Fulbright Scholar one year award by the State*

Department of USA .Chairman of the Dept. of Electrical and Computer Engineering, University of Patras (1999-2003). Academic Honorary Member of the Russian Academic Council of Mechatronics and Robotics since 2002 and Honorary Invited Professor of the University of Science and Technology of the Eastern China of Shanghai since 2013. President and CEO of Patras Science Park, Patras, Greece (2004–2010). The Greek Representative to the High Level Group (HLG) of EUREKA for 10 years (reporting directly to the Minister of Research and Technology). The Greek NMO representative to the Council of the International Federation of Automatic Control (reporting directly to the Minister of Development).Vice-President of the Technical Advisory Board, National Institute for Research (2005-10). The Greek National representative to a number of high positions at European Management Committees (ESPRIT, ICT, IMS, INCO). Vice-President of the Mediterranean Control Association (MCA) 1990-Present. Included in a) Who's Who in Frontiers of Science and Technology and b) Men of Achievement. General Chairman of IFAC Conferences, LSS '98 and MIM 2000, and of the IEEE Conferences, ISIC 2000 and MED 1994, 2000 and 2016.Chairman of the TC 9.5 of Large Scale Systems of IFAC (1996-2001).

He has been teaching undergraduate and graduate courses in the thematic areas of automatic control, signals and systems, stochastic processes, intelligent control, Fuzzy systems, Robotics, modeling Complex Dynamic Systems and Bioinformatics. His research interests covers the broad thematic areas of modeling and control of large Complex Dynamic Systems, Intelligent control, Artificial Intelligence (AI), fuzzy systems, Fuzzy Cognitive Maps, Dynamic Neural Networks, Hybrid Energy Systems (HES),Hierarchical Systems, Intelligent Manufacturing systems, Renewable Energy Sources (RES), Decision Support Systems (DSS), Knowledge Management, Creative software Computing, Simulation Methods, Technology Transfer and Innovation Systems.

He especially has conducted funded research using advanced new intelligent and fuzzy techniques in many applications especially in Manufacturing, Health, Energy, Environment, Agriculture and Transportation. He has been the principal investigator and/or participated as a partner in many R&D projects funded by the EC, the Greek Government and/or the private sector. He has published 3 books, edited 7 books, 10 invited chapters in books and over 300 papers in journals and/or in International conferences. He has an h-index 32 the highest on his department and more than 5200 citations. Prof. Groumpos has been the Reviewer for a number of International Journals and for many International Conferences. Has organized many invited special sessions on Conferences and has been Keynote Plenary Invited Speaker in more than 20 International conferences. Member of IPC on more than 40 International conferences. Prof. Groumpos has supervised more than 25 Doctoral Thesis and more than 200 Master Thesis on his life time (including USA).

Vladimir Tsyganov,

Professor, PhD, Head researcher of the Institute of Control Sciences (ICS), Head of Moscow department of the Institute of Transport Problems (ITP), Russia,
http://www.ipu.ru/node/11549

ADAPTING, LEARNING, AND CONTROL THE SUPPLY OF A VITAL COMMODITY SUCH AS COVID-19 VACCINE

In the face of a shortage of a vital commodity (such as the COVID-19 vaccine), the problem of managing a democratic socio-economic system arises. The citizens' approval of the actions of the authorities to increase the production and supply of this product contributes to political stability. The possibilities of increasing the supply of a vital commodity depend on random factors. In the face of such uncertainty, in the age of artificial intelligence, the management of a socio-economic system can be based on machine learning and adaptation. In this case, it is necessary to take into account the activity of the elements of the system associated with the presence of their own goals, which do not necessarily coincide with the goal of the system as a whole. These elements can influence adaptation and machine learning procedures to achieve their goals. The research is carried out on a three-level model of a democratic socio-economic system. At its top level is a member of society - a citizen who evaluates the politician who is at the middle level of the system. In turn, the politician can influence the increase in the supply of a vital commodity, including both its purchase on the market and production at a local plant belonging to the lower level of the system. Political stability is guaranteed if the citizen regularly approves the actions of the politician to increase the supply of vital goods. But the plant's management knows its own production potential better than the politician. Thus, this leadership can manipulate the volume of its own production in order to gain more support from the politician. A politician may also manipulate the opportunities available to him in order to achieve personal goals. To avoid manipulation of the supply of a vital product under conditions of uncertainty, a socio-economic management mechanism is proposed, including an economic and political mechanism. The economic mechanism includes a procedure for adaptive forecasting of the production of a vital commodity, as well as a procedure for supporting this production. The political mechanism includes a procedure for machine self-learning of a citizen, as well as a procedure for assessing the activity of a politician. Sufficient conditions for the synthesis of the optimal mechanism of socio-economic management are found, in which random opportunities to increase the supply of a vital commodity

are fully used, including both purchases on the market and production at a local plant. An example of such a socio-economic mechanism is considered on the example of the supply of the COVID-19 vaccine to England.

Short Bio. Education of V. Tsyganov: Magister of engineering in theoretical physics, Moscow Physics-Technical Institute (1966 – 1972); 1st Ph.D. in control of social and economic systems proved in ICS, Moscow (1979); 2nd Ph.D. – also in ICS (2000); professor of control of socio-economic systems (2005).

Career: Head researcher of ICS (1979-2021). Career-related: Head of Moscow department of ITP (2011-2021); Consultant of Experimental Plant "EZAN" (2001-2021); Member of board of bank "Vitas", Moscow (2004-2008) etc.

Author of monographs: Adaptive control mechanisms for branch of industry (1991); Intellectual Enterprise: mastering capital and power / Theory and practice of management of organization evolution (2004); Adaptive organization of the railway complex (2009); Safety of socio-economic systems (2009); Modernization of the National security system (2010); Reforming rail freight in Russia: Criticism of liberal reform under growth constraints (2012); Sociology of public safety (2014); Large scale transport systems: theory, methodology, development and expertise (2016); Infrastructure of Siberia, the Far East and the Russian Arctic: state and 3 stages of development until 2050 (2019); Strategic planning for sustainable development of Russian economics: threats, goal setting, forecast, recommendations (2021).

Coauthor of monograph series "Social & Political Technologies" (Methods and technologies of information wars (2007); Information management (2009); Adaptive mechanisms and high humanitarian technologies: theory of humanitarian systems (2012) etc.). Hirsch index in SCOPUS - 10.

Awards: "Best book of the year" awarded by the Russian Book Editors Association for monograph "Intellectual Enterprize"(2004); Award of Advisor of the President of Russia (2010); Award of Senior Vice-President of JSC "Russian Railways" (2015); Award of the President of the Russian academy of Sciences (2019).

Professional Membership: Member of International Federation of Automatic Control (IFAC) Technical Committee TC5.4 Large Scale Complex Systems; Member of IFAC Technical Committee TC9.5 Technology, Culture and International Stability.

Wolfram Hardt,

Professor, Dr., Dean of Faculty for Computer Science at Chemnitz University of Technology, Germany, https://www.tu-chemnitz.de/informatik/index.php.en

INDUSTRY 4.0 - CHALLENGES AND CHANCES FOR SMART CITIES

Short Bio. *Wolfram Hardt was born in 09. May 1965 Soest, Germany.*
1991 Diploma degree in Computer Science, Univ. of Paderborn, Germany.
1996 Dr.-rer. nat. degree in Computer Science, Univ. of Paderborn, Germany.
2000 PD Dr.-Irer. nat., Habilitation entitled Integration von Verzögerungszeit-Invarianz in den Entwurf eingebetteter Systeme. Univ. of Paderborn, Germany
2000-2002 Chair of the Computer Science and Process Laboratory, University of Paderborn, Germany
2002-2003 Chair (procuration) of the Operating Systems Department of faculty for Elektrotechnik / Informatik, University of Kassel, Germany
since 2003 Chair of the Computer Engineering Department of the faculty for Computer Science, Technische Universität Chemnitz, Germany
2006 - 2013 Dean of the Faculty for Computer Science, Technische Universität Chemnitz, Germany
2013 - 2016 Vice Dean of the Faculty for Computer Science, Technische Universität Chemnitz, Germany
2016 - 2019 Dean of the Faculty for Computer Science, Technische Universität Chemnitz, Germany
since 2006 Scientific Director of Computing Center of Technische Universität Chemnitz, Germany
2019 Doctor Honoris causa from Novosibirsk State Technical University (NSTU), Novosibirsk

Sessions schedule

20 September

20-Sep-21 Registration Desk 8.30 – 17.00			2d Floor
Sessions	Start	Finish	Room
VSTU Software& Robotics exhibition	09:00	12:00	2nd Floor
Opening session. **Alexander Navrotskiy,** rector of Volgograd State Technical University. **Welcome speech.** **Alexey Kidalov,** IT Committee of Volgograd regional Administration. **Welcome speech.** **Alexey Volotskov,** Deputy of the Volgograd Regional Duma. **Welcome speech.** General Co-Chair **Dmitriy Novikov,** correspondence member of Russian Academy of Science, director of Institute of Control Sciences of Russian Academy of Sciences. **Welcome speech.**	09:30	10:00	Conference Hall
Keynote speaker **Vladimir Tsyganov,** V.A.Trapeznikov Institute of Control Sciences of the Russian Academy of Sciences, Moscow, Russia **Adapting, Learning, and Control the Supply of a Vital Commodity such as COVID-19 Vaccine**	10:00	10:40	Conference Hall
Keynote speaker **Peter Groumpos**, University of Patras, Greece(VC) **The Meta COVID-19 Pandemic Period: A Data Science Driven Wise Future Planet?**	10:40	11:20	Conference Hall
Coffee-break	11:20	11:50	2nd Floor
Session 1. **Knowledge Discovery in Patent and Open Sources for Creative Tasks.** Chairs: **Dmitriy Novikov, Alla Kravets**	11:50	13:10	B-208
Lunch	13:10	14:00	
Session 4. **Pro-active Modeling in Intelligent Decision Making Support.** Chairs: **Alexander Bolshakov, Maxim Shcherbakov**	14:00	16:00	B-208
Session 7. **Data Science in Social Networks Analysis and Cybersecurity** Chairs: **Vladimir Tsyganov, Natalia Sadovnikova**	16:00	17:40	B-208

Sessions schedule

21 September

Keynote speaker **Wolfram Hardt,** Chemnitz University of Technology, Germany (VC) **Industry 4.0 - Challenges and Chances for Smart Cities**	09:00	09:40	B-208
Session 6. **Intelligent technologies in Urban Design & Computing** Chairs: **Alexey Finogeev, Danila Parygin**	9:40	11:20	B-208
Keynote speaker **Igor Kalyaev**, Academician of Russian Academy of Science, scientific supervisor of Federal Research Center Southern Scientific Center RAS, Russia **Artificial Intelligence: Quo Vadis?**	11:20	12:00	B-208
Keynote speaker **Maxim Shcherbakov,** Volgograd State Technical University, Russia **Risk-oriented approach for technical condition management: impact of machine learning**	12:00	12:40	B-208
Lunch	13:10	14:00	
Volgograd State Technical University overview	14:00	15:00	
Conference tour	15:00	17:00	
Conference dinner	17:00		

22 September

Session 2. **Open Science Semantic Technologies.** Chairs: **Eduard Klyshinskiy, Dmitry Korobkin**	9:00	10:40	B-208
Keynote speaker **Alla Kravets,** Volgograd State Technical University, Russia **Artificial Intelligence: Data, Arts and Technical Creativity**	10:40	11:20	B-208
Coffee-break	11:20	11:50	2nd Floor
Session 5. **Design Creativity in CASE/CAI/CAD/PDM** Chairs: **Anna Matokhina**	11:50	13:10	B-208
Lunch	13:10	14:00	
Poster session	13:00	15:00	2nd Floor
Session 8. **Creativity & Game-Based Learning** Chairs: **Olga Shabalina**	14:00	16:20	B-208

23 September

Industrial Track **Data services in energy** **Igor Kovacevic,** PhD, Head Research Engineer, ILECO NV, Belgium **Annelies Vrotman,** PhD, Head of Data Science Group, Senior Data Scientist, ILECO NV, Belgium	09:00	10:30	B-208
Coffee-break	10:30	11:00	2nd Floor
Session 9. **Intelligent Assistive Technologies: Software Design and Application** Chairs: **Anton Ivaschenko, Alexey Kizim**	11:00	12:30	B-208
Lunch	13:00	14:00	
Session 3. **IoT & Computer Vision in Knowledge-Based Control.** Chairs: **Oleg Choporov**, **Alexander Kataev**	14:00	15:10	B-208
Final session. Best papers award.	16:00	16:30	B-208

Keynote speech 30 min+10 min discussion. Presentation 15 min+5 min discussion.

VC – Video-conference

#	Topic	Date	Start	Finish	Room
	Track1. Artificial intelligence & Deep Learning Technologies				
1.	**Knowledge discovery in patent and open sources for creative tasks**	**20-Sep-21**	11:50	13:10	B-208
1.1.	The measure of the technological complementarity between enterprises based on patent databases *Alexey Bezruchenko, **Dmitriy Korobkin**, Sergey Fomenkov, Sergey Kolesnikov, Sergey Vasiliev*				
1.2.	Analyzing and Forecasting Emerging Technology Trends by Mining Web News ***Thanh Viet Nguyen**, Vladislav Gneushev*				
1.3.	Development of a Method for Intellectual Support of Inventive Activity Based on Deep Machine Learning Methods **Alla Kravets**, Nataliya Salnikova, Irina Medintseva, Vladimir Shinkaruk				
1.4.	Relevant Image Search Method when Processing a Patent Array **Alla Kravets**, Nataliya Salnikova, Ilya Mikhnev, Natalia Solovieva				
2.	**Open Science Semantic Technologies**	**22-Sep-21**	9:00	10:40	B-208
2.1.	Improvement of intent classification using diacritic restoration for text message in chatbot ***Trang Nguyen**, Maxim Shcherbakov*				
2.2.	Chomsky Was (Almost) Right: Ontology-based Parsing of Texts of a Narrow Domain *Boris Geltser, Tatiana Gorbach, Valeria Gribova, Olesya Karpik, **Eduard Klyshinskiy**, Dmitrii Okun, Margarita Petryaeva, Karina Shakhgeldyan*				
2.3.	Numerical and Symbolic Integration in the MAPLE Package: Software for Antiplane Problems of the Non-Linear Elasticity Theory ***Yulia Andreeva**, Natalia Asanova, Irina Tarasova*				
2.4.	Creative Knowledge Representation for Knowledge Management: The Dialectical Approach ***Elena Rusyaeva**, Alla Kravets*				
3.	**IoT & Computer Vision in Knowledge-Based Control**	**23-Sep-21**	14:00	15:10	B-208
3.1.	Optimization of the intelligent controller rule base based on fuzzy clustering for controlling an object operating in changing conditions *Alexandra Ignatyeva, Victor Kureychik, **Vladimir Ignatyev**, Viktor Soloviev, Denis Beloglazov, Andrey Kovalev*				
3.2.	Optimization of Internet of Things System *Igor Lvovich, Yakov Lvovich, Andrey Preobrazhenskiy, **Oleg Choporov***				
3.3.	New communicative strategies for the affective robot: F-2 going tactile and complimenting ***Liliya Volkova**, Andrey Ignatev, Nikita Kotov, Artemy Kotov*				
3.4.	The System of Intelligent Identification of Harmful Objects in the Field of Agriculture ***Mohammed Al-Gunaid**, Maxim Shcherbakov, Vsevolod Tishenko, Vladislav Trubitsin*				
	Track 2. Cyber-Physical Systems & Big Data-driven world				
4.	**Pro-active Modeling in Intelligent Decision Making Support**	**20-Sep-21**	14:00	16:00	B-208
4.1.	Analysis of the competitiveness risks of food production enterprises using mathematical modelling methods				

	*Irina Veshneva, **Alexander Bolshakov**, Anna Fedorova*				
4.2.	Comparative Study of the Innovative Activity Dynamics in the Russian Federation Using the Singular Spectrum Analysis ***Alexey Simonov**, Aleksey F. Rogachev, Irina E. Simonova*				
4.3.	Formalization of the choice for optimal technological solutions ***Yuri Kazakov**, Anastasia Tishchenko*				
4.4.	System approach in organization of international students' mobility *Alexey Godenko, **Grigory Boyko**, Rashid Gadgiev*				
4.5.	Evaluation of the State Effectiveness in the Model of Control of Generalized Computational Experiment *Alena Zakharova, **Dmitriy Korostelyov**, Aleksandr Podvesovskii*				
4.6.	Proactive modeling in the assessment of the structural functionality of the subject of critical information infrastructure ***Elena Maksimova**, Natalia Sadovnikova*				
5.	**Design Creativity in CASE/CAI/CAD/PDM**	**22-Sep-21**	11:50	13:10	B-208
5.1.	Automatic calculation of material laying trajectories when preparing 3D models for five-axis FFF printing with continuous fiber reinforcement ***Ilya Gushchin**, Ivan Torubarov, Andrey Shvets, Aleksey Yakovlev, Alexander Plotnikov, Andrey Andreev*				
5.2.	Constructing equidistant curve for planar composite curve in CAD systems ***Oleg Filimonov**, Vitaly Egunov, Elena Nesterenko*				
5.3.	Development of a discrete slicer for additive manufacturing *Andrey Andreev, Oleg Filimonov, Marina Andreeva, **Aleksey Drobotov**, Anna Shmelyeva, Michail Denisov*				
5.4.	Data processing pipeline: from 3D surface scanning to coke drum residual life assessment ***Timur Janovsky**, Andrey Naidenko, Marina Kadykova, Anton Kiselev*				
6.	**Intelligent technologies in Urban Design& Computing**	**21-Sep-21**	9:40	11:20	B-208
6.1.	Computer aided evaluation of individual traffic road safety along a given route within the framework of the "driver-car-road-environment" system ***Dmitry Skorobogatchenko**, Vitaly Borovik, Roman Chugumbaev, Anastasia Borovik*				
6.2.	Database of architectural patterns, heritage objects and plots for conceptual design of urban objects ***Irina Petrova**, Viktoriia Zaripova, Kseniia Proshunina*				
6.3.	Collection and consolidation of big data for proactive monitoring of critical events at infrastructure facilities in an urban environment *Anton Finogeev, Danila Parygin, Sergiy Shevchenko, **Alexey Finogeev**, Danish Ather*				
6.4.	Development of a Methodology for Complex Monitoring of the Development of Urban and Suburban Areas based on the Intellectual Analysis of Earth Remote Sensing Data and Geospatial Technologies *Vitaliy Malikov, Natalia Sadovnikova, **Danila Parygin**, Alexander Aleshkevich, Oksana Savina*				
6.5.	Digital Technologies for Surveying Buildings and Structures ***Irina Petrova**, Viktoriia Zaripova, Oleg Mostovoy*				
	Track 3. Intelligent Technologies in Social Engineering				
7.	**Data Science in Social Networks Analysis and Cyber Security**	**20-Sep-21**	16:00	17:40	B-208

7.1.	Data Processing Based on the Structure Oriented Evaluation Online Tool from SERVQUAL Model ***Uranchimeg Tudevdagva, Bolorsaikhan Omboosuren**, Wolfram Hardt (VC)*				
7.2.	Expert & Technical Support for Investigation of Thefts Involving Malware Usage ***Evgeniy Kravets**, Alexey Alexeev, Sergey Nikonovich, Taulan Boziev, Nikolai Bukharov*				
7.3.	Biometrics databases as forensic registers *Yuri Bokov, **Daniyar Kairgaliev**, Sergei Kolotushkin, Polina Shmarion, Irina Titovets*				
7.4.	A secure and stable routing protocol for VANET under malicious attacks ***Amani Sabbagh**, Maxim Shcherbakov*				
8.	**Educational Creativity & Game-Based Learning**	**22-Sep-21**	14:00	16:20	B-208
8.1.	Lee's wave algorithm developed in Tower Defense (TD) game *Alexandr Bershadskii, **Vitalina Epp***				
8.2.	E-Learning Evaluation based on SURE Model: Case of Mongolian University of Pharmaceutical Sciences *Uranchimeg Tudevdagva, **Selenge Erdenechimeg**, **Bazarragchaa Sodnom** (VC)*				
8.3.	E-Learning Evaluation based on SURE Model: Case of Mongolian University of Science and Technology *Uranchimeg Tudevdagva, **Narantsatsral Delgerkhuu** (VC)*				
8.4.	A set of tools for updating and personalizing educational programs and content in an intellectual learning environment ***Mikhail Deev**, Anton Finogeev, Leyla Gamidullaeva, Sergiy Shevchenko, Alexey Finogeev*				
8.5.	User Engagement Assessment for Adaptive Learning Systems Angelina Voronina, **Olga Shabalina**, Alexander Kataev, Natalia Sadovnikova				
8.6.	Cybersecurity Specialists' E-Learning Problems ***Svyatoslav Biryukov**, Dmitry Vasilev, Lubov Kokoreva, Polina Shmarion, Sergey Nikonovich*				
8.7.	Using Virtual Reality Systems for Crime Scene Reconstruction ***Igor Trushchenkov**, Vladimir Bulgakov, Elena Bulgakova, Kirill Yarmak, Irina Trushchenkova*				
8.8.	Model for creating an adaptive individual learning path for training Digital Transformation Professionals and Big Data Engineers using Virtual Computer Lab *Stanislav Grtishko, **Mikhail Belov**, Evgeniya Cheremisina, Petr Sychev*				
9.	**Intelligent Assistive Technologies: Software Design and Application**	**23-Sep-21**	11:00	12:30	B-208
9.1.	Development of Specialized Methods and Algorithms for Preventive Monitoring of Reliability ***Maksim Dyatlov**, Olga Shabalina, Alexey Todorev, Rodion Kudrin, Yuriy Komarov, Konstantin Katerinin*				
9.2.	User Experience Analysis based on a Virtual Mark-up Approach ***Anton Ivaschenko**, Arkadiy Krivosheev*				
9.3.	Mobile Interface Personalization during the Application Usage Based on Patterns Ontology Model for People with Special Needs ***Anastasiya Potseluico**, Ekaterina Azarova (VC)*				
9.4.	Methodology for Preclinical Laboratory Research Using Machine Learning ***Vadim Loshmanov**, Viktor Petraevskiy, Pavel Fantrov*				

Publishing

This conference continues previous, the proceedings were published in Springer and indexed in Scopus and Web of science Core collection (ISI). We are pleased to know that our proceedings book among the 25% most downloaded sources from Springer. You can find the book content using the links below.

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Knowledge-Based Software Engineering

11th Joint Conference, JCKBSE 2014, Volgograd, Russia, September 17-20, 2014. Proceedings

Editors: **Kravets**, A., **Shcherbakov**, M., **Kultsova**, M., **Iijima**, T. (Eds.)

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Creativity in Intelligent Technologies and Data Science

First Conference, CIT&DS 2015, Volgograd, Russia, September 15-17, 2015. Proceedings

Editors: **Kravets**, A., **Shcherbakov**, M., **Kultsova**, M., **Shabalina**, O. (Eds.)

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Creativity in Intelligent Technologies and Data Science

Second Conference, CIT&DS 2017, Volgograd, Russia, September 12-14, 2017, Proceedings

Editors: **Kravets**, A., **Shcherbakov**, M., **Kultsova**, M., **Groumpos**, P. (Eds.)

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Creativity in Intelligent Technologies and Data Science

Third Conference, CIT&DS 2019, Volgograd, Russia, September 16–19, 2019, Proceedings, Part I

Editors: **Kravets**, A.G., **Groumpos**, P.P., **Shcherbakov**, M., **Kultsova**, M. (Eds.)

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Creativity in Intelligent Technologies and Data Science

Third Conference, CIT&DS 2019, Volgograd, Russia, September 16–19, 2019, Proceedings, Part II

Editors: **Kravets**, A.G., **Groumpos**, P.P., **Shcherbakov**, M., **Kultsova**, M. (Eds.)

1. **Creativity in Intelligent Technologies and Data Science Second Conference, CIT&DS 2021, Volgograd, Russia, September 16-19, 2021 (The current conference)**
2. Creativity in Intelligent Technologies and Data Science Second Conference, CIT&DS 2019, Volgograd, Russia, September 16-19, 2019, Part I https://www.springer.com/gp/book/9783030297428 , Part II https://www.springer.com/gp/book/9783030297497
3. Creativity in Intelligent Technologies and Data Science Second Conference, CIT&DS 2017, Volgograd, Russia, September 12-14, 2017, http://www.springer.com/cn/book/9783319655505
4. Creativity in Intelligent Technologies and Data Science First Conference, CIT&DS 2015, Volgograd, Russia, September 15-17, 2015. http://www.springer.com/us/book/9783319237657
5. Knowledge-Based Software Engineering 11th Joint Conference, JCKBSE 2014, Volgograd, Russia, September 17-20, 2014. Proceedings https://www.springer.com/us/book/9783319118536