



IntelITSIS

Programme of the 2nd International Workshop on Intelligent Information Technologies & Systems of Information Security (IntelITSIS-2021)

Khmelnytskyi, Ukraine, March 24 – 26, 2021

Time regarding the Kyiv

Countries which represent authors	Time in countries regarding the time of Ukraine
Egypt	The same
Czech Republic	- 1
Austria	- 1
Turkey	+ 1
Kazakhstan	+ 4
Moroco	- 1
Slovak Republic	- 1
Poland	- 1
United Kingdom	- 2
United States	- 7
Estonia	The same
Greece	The same

Timetable of the Workshop

Time (Kyiv)	March 24 th 2021	March 25 th 2021	March 26 th 2021
9.00		Section Session 1 Intelligent Information Technologies	Section Session 2 Systems of Information Security
11.00		Coffee Break	Coffee Break
11.30		Section Session 2 Systems of Information Security	Section Session 1 Intelligent Information Technologies
13.00		Lunch	Lunch
14.00	Plenary Session Welcome Secure and Intelligent World	Section Session 1 Intelligent Information Technologies	Section Session 1 Intelligent Information Technologies
15.45	Coffee Break	Coffee Break	Coffee Break
16.00	Plenary Session Secure and Intelligent World	Section Session 2 Systems of Information Security	Plenary Session Awards and Close Ceremony

Presentation timing:

Invited speakers – 25 minutes + 5 minutes Q&A;

Session talks – 7-10 minutes + 3-5 minutes Q&A.

Each session includes additional 10 minutes for discussion.

Testing of Connection:

March 24th, 2021, 13.45-14.00 (1.45 PM – 02.00 PM)

March 25th, 2021, 08.45-09.00 (8.45 AM – 09.00 AM)

March 26th, 2021, 08.45-09.00 (8.45 AM – 09.00 AM)

Zoom links:

Plenary session	https://us02web.zoom.us/j/74952395521?pwd=Z1g0a01XN3RRR000MGxibDdEWjh1UT09 Meeting ID: 749 5239 5521 Password: 123456
Session 1 Intelligent Information Technologies	https://us02web.zoom.us/j/74952395521?pwd=Z1g0a01XN3RRR000MGxibDdEWjh1UT09 Meeting ID: 749 5239 5521 Password: 123456
Session 2 Systems of Information Security	https://us02web.zoom.us/j/74952395521?pwd=Z1g0a01XN3RRR000MGxibDdEWjh1UT09 Meeting ID: 749 5239 5521 Password: 123456

Plenary Session Schedule

Plenary sessions	Invited presentations
Welcome Secure and Intelligent World March 24th 2021 14.00-17.00 Moderators: Tetiana Hovorushchenko, Sergii Lysenko	<p>14.00-14.20 <i>Greetings from the IntelITSIS Organizers:</i> Professor Tetiana Hovorushchenko, Khmelnytskyi National University, Ukraine (General Chair of the Workshop) Professor Oleg Syniuk, Vice-Rector of Khmelnytskyi National University, Ukraine DrSc Sergii Lysenko, Khmelnytskyi National University, Ukraine (International Program Committee Chair)</p> <p>14.20-14.30 <i>Trends of the IntelITSIS-2021</i> Professor Tetiana Hovorushchenko, Khmelnytskyi National University, Ukraine</p> <p>14.30-15.10 <i>HealthSupervisor: Mobile Application for Round-the-Clock Remote Monitoring of the Human Functional State</i> Professor Anatoliy Melnyk, The John Paul II Catholic University of Lublin, Poland, Intron ltd, Ukraine; Yurii Morozov, Bohdan Havano, Petro Hupalo, Intron ltd, Ukraine</p> <p>15.10-15.45 <i>A High-Level View of Cybersecurity</i> Professor George Markowsky, Missouri University of Science and Technology, USA</p> <p>15.45 – 16.00 <i>Coffee Break</i></p> <p>16.00-16.30 <i>Intelligent System for Building Separation on a Semantically Segmented Map</i> Professor Volodymyr Hnatushenko, Dnipro University of Technology, Ukraine; Vadym Zhernovyi, Oles Honchar Dnipro National University, Ukraine; Dr Iryna Udovyk, Dnipro University of Technology, Ukraine; Olga Shevtsova, Dnipro University of Technology, Ukraine</p> <p>16.30-17.00 <i>Intelligent Information Technology for Providing Human Resources to Projects in a Multi-Project Environment</i> Dr Nataliia Dotsenko, O.M. Beketov National University of Urban Economy in Kharkiv, Ukraine; Dr Dmytro Chumachenko, National Aerospace University "Kharkiv Aviation Institute", Ukraine; Dr Yuliia Husieva, O.M. Beketov National University of Urban Economy in Kharkiv, Ukraine;</p>

	<p>Dr Iryna Kadykova, O.M. Beketov National University of Urban Economy in Kharkiv, Ukraine;</p> <p>Professor Igor Chumachenko, O.M. Beketov National University of Urban Economy in Kharkiv, Ukraine</p>
<p>Awards and Close Ceremony</p> <p>March 26th 2021</p> <p>16.00-16.30</p> <p>Moderators: Tetiana Hovorushchenko, Sergii Lysenko</p>	<p>16.00-16.30</p> <p><i>Awards and Close Ceremony</i></p>

Section Sessions Schedule

Section Sessions	Presentations
<p style="text-align: center;">Section Session 1 Intelligent Information Technologies</p> <p style="text-align: center;">March 25th 2021 09.00-11.00</p> <p>Moderators: Tetiana Hovorushchenko, Yelyzaveta Hnatchuk, Olga Pavlova</p>	<p>Serhii Leoshchenko, Andrii Oliinyk, Sergey Subbotin and Vadym Shkarupylo <i>Using the Actor-Critic method for population diversity in neuroevolutionary synthesis</i></p> <p>Anastasiia Deineko, Yevgeniy Bodyanskiy, Oleksandr Hontsa and Oleksandr Zeleniy <i>Convolutional hyper basis function neural network and its online learning in the image recognition task</i></p> <p>Kateryna Yalova, Kseniia Yashyna and Iryna Ivanochko <i>Neural Approach for Named Entity Recognition</i></p> <p>Bohdan Durnyak, Mikola Lutskiv, Petro Shepita, Danylo Hunko and Nataliia Savina <i>Formation of Linear Characteristic of Normalized Raster Transformation for Rhombic Elements</i></p> <p>Bohdan Durnyak, Mikola Lutskiv, Petro Shepita, Roman Karpyn and Nataliia Savina <i>Determination of the Optical Density of Two-Parameter Tone Transfer for a Short Printing System of the Sixth Dimension</i></p> <p>Sergii Babichev, Mykhailo Yasynskyi, Lyudmyla Yasynska-Damri, Yurii Ratushniak and Volodymyr Lytvynenko <i>Current State of the Problem of Gene Expression Data Processing and Extraction to Solve the Reverse Engineering Tasks in the Field of Bioinformatics</i></p> <p>Yuliya Sikirda, Tetiana Shmelova, Vyacheslav Kharchenko and Mykola Kasatkin <i>Intelligent System for Supporting Collaborative Decision Making by the Pilot/Air Traffic Controller in Flight Emergencies</i></p> <p>Andrii Safonyk, Maksym Mishchanchuk and Volodymyr Lytvynenko <i>Intelligent information system for the determination of iron in coagulants based on a neural network</i></p> <p>Svitlana Petrasova and Nina Khairova <i>Information Technology for Extraction of Coherent Text Fragments from Scientometric Databases</i></p>
<p style="text-align: center;">Section Session 1 Intelligent Information Technologies</p> <p style="text-align: center;">March 25th 2021 14.00-15.45</p>	<p>Mykola Skyba, Tetiana Hovorushchenko, Valeriy Martynyuk, Olexander Zasornov and Olga Pavlova <i>Intelligent Solar Tracking System as a Prospect for Developing the Alternative Energetics in Ukraine</i></p>

<p>Moderators: Tetiana Hovorushchenko, Yelyzaveta Hnatchuk, Olga Pavlova</p>	<p>Tetiana Hovorushchenko, Yelyzaveta Hnatchuk, Alla Herts and Oksana Onyshko <i>Intelligent Information Technology for Supporting the Medical Decision-Making Considering the Legal Basis</i></p> <p>Ivan Lopatto, Mykyta Lebiga, Yurii Forkun and Artem Boyarchuk <i>Method for Determining the Informativeness of the Software Requirements Specifications</i></p> <p>Yelyzaveta Hnatchuk, Olga Pavlova and Krystyna Havrylyuk <i>Method of Forecasting the Characteristics and Evaluating the Implementation Success of IT Projects Based on Requirements Analysis</i></p> <p>Yaroslav Hnatchuk, Alina Hnatchuk, Maryan Pityn, Ivan Hlukhov and Olga Cherednichenko <i>Intelligent Decision Support Agent Based on Fuzzy Logic in Athletes' Adaptive E-Learning Systems</i></p> <p>El Bouhissi Houda, Micipsa Adel, Anis Ketam and Abdel-Badeeh Salem <i>Towards an Efficient Knowledge-based Recommendation System</i></p> <p>Vyacheslav Repeta, Valeriy Zhydetsky, Ihor Liakh and Olga Cherednichenko <i>Modeling with Fuzzy Logic the Migration Capacity of UV-ink Components as a Factor of Potentially Harmful Pollution of Packaging</i></p> <p>Sergey Ivanov, Nataliia Maksyshko and Mykola Ivanov <i>Neural network forecasting using Big data</i></p>
<p>Section Session 1 Intelligent Information Technologies</p> <p>March 26th 2021 11.30-13.00</p> <p>Moderators: Tetiana Hovorushchenko, Yelyzaveta Hnatchuk, Olga Pavlova</p>	<p>Tetiana Neskoro dieva and Eugene Fedorov <i>Method for Automatic Processing of Audit Content Based On Bidirectional Neural Network Mapping</i></p> <p>Eduard Manziuk, Olexander Barmak, Iurii Krak, Olexander Mazurets and Tetiana Skrypnyk <i>Formal Model of Trustworthy Artificial Intelligence Based On Standardization</i></p> <p>Petro Kravets, Vasyl Lytvyn, Yevhen Burov, Oksana Oborska, Victoria Vysotska and Lyudmyla Dzyubyk <i>Stochastic Game Model of Data Clustering</i></p> <p>Iurii Krak, Olexander Barmak and Pavlo Radiuk <i>Detection of Early Pneumonia on Individual CT Scans with Dilated Convolutions</i></p> <p>Nickolay Rudnichenko, Vladimir Vychuzhanin, Natalia Shibaeva, Svetlana Antoshchuk and Petrov Igor <i>Intellectual Information System for Supporting Text Data Rephrasing Processes Based on Deep Learning</i></p>

	<p>Oleksiy Kozlov <i>Optimal Selection of Membership Functions Types for Fuzzy Control and Decision Making Systems</i></p> <p>Vsevolod Senkivskyy, Iryna Pikh, Sergii Babichev, Alona Kudriashova and Nataliia Senkivska <i>Modeling of Alternatives and Defining the Best Options for Websites Design</i></p>
<p>Section Session 1 Intelligent Information Technologies</p> <p>March 26th 2021 14.00-15.45</p> <p>Moderators: Tetiana Hovorushchenko, Yelyzaveta Hnatchuk, Olga Pavlova</p>	<p>Bohdan Kovalskiy, Myroslava Dubnevych and Tetyana Holubnyk <i>Information model for determining the significance of factors influencing the level of digital noise in photographic images</i></p> <p>Bohdan Yeremenko, Yuliia Riabchun, Vitalii Ploskiy, Daoud Mezzane, Iryna Aznaurian and Natalia Kryvinska <i>Intelligent information technologies implementation to the process of professional self-identification</i></p> <p>Serhiy V. Balovsyak, Mariana D. Borcha, Michal Gregus, Khrystyna S. Odaiska, Nataliya F. Serpak <i>Automatic processing of digital X-ray medical images by bilateral filtration method</i></p> <p>Valerii Lovkin, Andrii Oliinyk and Yurii Lukashenko <i>Air Pollution Prediction as a Source for Decision Making Framework in Medical Diagnosis</i></p> <p>Orest Khamula, Oleksandr Tymchenko, Svitlana Vasiuta, Olha Sosnovska and Nataliia Kunanets <i>Synthesis and Research of a Model of Factors of Infographics Compositional Design with Elements of Visual Communication</i></p> <p>Yuriy Turbal, Mariana Turbal, Andriy Bomba, Abd Alkaleg Hsen Driwi and Nataliia Kunanets <i>Modification of the "pyramidal" algorithm of the small time series forecasting</i></p> <p>Roman Gramyak, Hrystyna Lipyana-Goncharenko, Anatoliiy Sachenko, Taras Lendyuk and Diana Zahorodnia <i>Intelligent Method of a Competitive Product Choosing based on the Emotional Coloring Feedbacks</i></p> <p>Maryna Zharikova, Volodymyr Sherstjuk and Bohdan Sakovych <i>Decision-support system for spatially distributed multi-hazard risk analysis</i></p>

Section Sessions	Presentations
<p data-bbox="209 248 513 353">Section Session 2 Systems of Information Security</p> <p data-bbox="252 405 470 472">March 25th 2021 11.30-13.00</p> <p data-bbox="240 521 481 667">Moderators: Oleh Savenko, Sergii Lysenko, Andrii Nicheporuk</p>	<p data-bbox="533 248 1505 394">Ihor Pilkevych, Oleg Boychenko, Nadiia Lobanchykova, Tetiana Vakaliuk and Serhiy Semerikov <i>Method of Assessing the Influence of Personnel Competence on Institutional Information Security</i></p> <p data-bbox="533 443 1505 589">Oleg Bisikalo, Olesia Boivan, Oksana Kovtun, Viacheslav Kovtun and Nina Khairova <i>Precision automated phonetic analysis of speech signals for information technology of text-dependent authentication of a person by voice</i></p> <p data-bbox="533 638 1505 705">Vyacheslav Gorev, Alexander Gusev and Valerii Korniienko <i>Fractional Gaussian noise traffic prediction based on the Walsh functions</i></p> <p data-bbox="533 754 1505 822">Sergii Lysenko, Kira Bobrovnikova, Piotr Gaj and Tomas Sochor <i>Resilient Computer Systems Development for Cyberattacks Resistance</i></p> <p data-bbox="533 871 1505 1016">Oleksandr Tymchenko, Bohdana Havrysh, Mariya Nazarkevych, Oleksandr O. Tymchenko and Orest Khamula <i>Architecture and Graphic Interface of the Simulator Personal Local Wireless Networks</i></p> <p data-bbox="533 1066 1505 1211">Gulmira Shakhmetova, Zhanat Saukhanova, Nur Izura Udzir, Altynbek Sharipbay and Nurgazy Saukhanov <i>Application of Pseudo-Memory Finite Automata for Information Encryption</i></p> <p data-bbox="533 1261 1505 1406">Stetsyuk Mykola, Stetsyuk Vasyl, Bohdan Savenko, Savenko Oleg and Maciej Dobrowolski <i>Implementation of Control by Parameters of Client Automated Workplaces of Specialized Information Systems for Neutralization Malware</i></p>
<p data-bbox="209 1458 513 1563">Section Session 2 Systems of Information Security</p> <p data-bbox="252 1615 470 1682">March 25^h 2021 16.00-17.45</p> <p data-bbox="240 1731 481 1877">Moderators: Oleh Savenko, Sergii Lysenko, Andrii Nicheporuk</p>	<p data-bbox="533 1458 1505 1525">Sedat Akleylek, Ramazan Koyutürk and Hakan Kutucu <i>GPU Implementation of Quantum Secure ABC Cryptosystem on Cuda</i></p> <p data-bbox="533 1574 1505 1720">Iryna Moiseienko, Ivanna Droniuk, Olena Gorina, Halina Mychailyshyn and Kateryna Dubska <i>Automated Compressed Image Recovery Implementation for Video Surveillance Systems as Information Security Improvement</i></p> <p data-bbox="533 1769 1505 1915">Myroslava Bublyk, Victoria Vysotska, Lyubomyr Chyrun, Valentyna Panasyuk and Oksana Brodyak <i>Assessing Security Risks Method in E-Commerce System for IT Portfolio Management</i></p> <p data-bbox="533 1964 1505 2110">Anastasiia Nicheporuk, Andrii Nicheporuk, Anatoliy Sachenko, Oleg Sachenko and Andrii Kazantsev <i>A System for Detecting Anomalies and Identifying Smart Home Devices Using Collective Communication</i></p>

	<p>Lubomir Sikora, Rostislav Tkachuk, Natalia Lysa, Ivanna Dronyuk, Olga Fedevych and Romana Talanchuk <i>Information-resource and cognitive concept of threat's influence identification on technogenic system based on the cause and category diagrams integration</i></p> <p>Paiuk Vadym, Kosenkov Volodymyr, Savenko Oleg, Nicheporuk Andrii and Geidarova Olena <i>Application of Multifactor Analysis for the Purpose of Detecting Malicious Software Implants of the Software in Local Computer Networks</i></p> <p>Sergii Surkov and Oleksander Martynyuk <i>Authentication and request processing model in high load modes for IoT components</i></p>
<p>Section Session 2 Systems of Information Security</p> <p>March 26th 2021 09.00-11.00</p> <p>Moderators: Oleh Savenko, Sergii Lysenko, Andrii Nicheporuk</p>	<p>Volodymyr Morkun, Natalia Morkun, Andrii Pikilnyak, Oleksandra Serdiuk, Serhiy Semerikov and Irina Gaponenko <i>Cyber-physical System for Increasing the Efficiency of the Iron Ore Desliming Process</i></p> <p>Heorhii Zemlianko, Volodymyr Torianyuk and Vyacheslav Kharchenko <i>IMECA Based Assessment of Internet of Drones Systems Cyber Security Considering Radio Frequency Vulnerabilities</i></p> <p>Oleksandr Drozd, Olena Ivanova, Kostiantyn Zashcholkin, Vitaliy Romankevich and Julia Drozd <i>Checkability Important for Fail-Safety of FPGA-based Components in Critical Systems</i></p> <p>Oleksandr Martynyuk, Lyudmila Sugak, Hanna Stepova, Victor Antoniuk and Igor Mileiko <i>Models of Distributed Systems Testing Based on Energy Consumption in Behavior</i></p> <p>Viktor Melnyk <i>Data Structures and Lookup Algorithms Investigation for the IEEE 802.15.4 Security Procedures Implementation</i></p> <p>Kira Bobrovnikova, Sergii Lysenko, Dmytro Denysiuk, Peter Popov and Andrii Goroshko <i>Technique for IoT attacks detection based on the energy consumption analysis</i></p> <p>Kostiantyn Zashcholkin, Oleksandr Drozd, Olena Ivanova, Ruslan Shaporin and Mykola Kuznietsov <i>An Approach to Stego-Container Organization in FPGA Systems for Approximate Data Processing</i></p> <p>Kashtalian Antonina and Tomas Sochor <i>K-means Clustering of Honeynet Data with Unsupervised Representation Learning</i></p>

Mykhailo Kasianchuk, Ihor Yakymenko, Vasyl Yatskiv, Stepan Ivasiev and
Andriy Sverstiuk

*Same bit-size moduli formation of residue number system for application
in asymmetric cryptography*