Programme of the 3rd International Workshop on Intelligent Information Technologies & Systems of Information Security (IntelITSIS-2022)

Khmelnytskyi, Ukraine, May 25 – 27, 2022

Time regarding the Kyiv

Countries which represent authors	Time in countries regarding the time of Ukraine
Nigeria	- 2
Poland	- 1
United Kingdom	- 2
Slovak Republic	- 1
Egypt	- 1
Algeria	- 2
Czech Republic	- 1
Estonia	The same
India	+ 2.30
Germany	- 1
United States	- 7
Austria	- 1
Turkey	The same
Greece	The same

Timetable of the Workshop

Time (Kyiv)	May 25th 2022	May 26th 2022	May 27th 2022
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	**Welcome & Plenary Session**	Section Session 1 Intelligent Information Technologies	Section Session 3 Computer systems and networks
15.30	Coffee Break	Coffee Break	Coffee Break
15.45	**Plenary Session**	Section Session 3 Computer systems and networks	**Plenary Session** Awards and Close Ceremony

Presentation timing:
Invited presentations – 20-25 minutes + 5 minutes Q&A;
Session presentations – 7-10 minutes + 3-5 minutes Q&A.
Each session includes additional 10 minutes for discussion.

Testing of Connection:
May 25th, 2022, 13.45-14.00 (1.45 PM – 02.00 PM), Kyiv time
May 26th, 2022, 08.45-09.00 (8.45 AM – 09.00 AM), Kyiv time
May 26th, 2022, 08.45-09.00 (8.45 AM – 09.00 AM), Kyiv time

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
Session 3 Computer systems and networks	https://us02web.zoom.us/j/74952395521?pwd=Z1g0a01XN3RRR000MGxibDdEWjh1UT09 Meeting ID: 749 5239 5521 Password: 123456

Plenary Session Schedule

Plenary sessions	Invited presentations
Welcome & Plenary Session **May 25th 2022** **14.00-17.15** Moderators: Tetiana Hovorushchenko, Sergii Lysenko	**14.00-14.20** *Greetings from the IntelITSIS Organizers:* **Tetiana Hovorushchenko**, Khmelnytskyi National University, Ukraine (General Chair of the Workshop) **Oleg Syniuk**, Vice-Rector of Khmelnytskyi National University, Ukraine **Sergii Lysenko**, Khmelnytskyi National University, Ukraine (International Program Committee Chair) **14.20-14.30** *Trends of the IntelITSIS-2022* **Tetiana Hovorushchenko**, Khmelnytskyi National University, Ukraine **14.30-15.00** *On determining the state of processors of a multiprocessor system during its testing* **Alexei Romankevich, Kostiantyn Morozov and Vitaliy Romankevich**, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine **15.00-15.30** *Finding Moving Targets on the Projection Image from the Laser Emitter of the Multimedia Trainer* **Serhii Yaremenko and Iurii Krak**, Taras Shevchenko National University of Kyiv, Ukraine **15.30 – 15.45** *Coffee Break* **15.45-16.10** *A Web-Based Application for Modeling and Deploying Fuzzy Logic-Based Decision Support Systems for Autonomous Cyberphysical Systems* **Anatoliy Melnyk, Bohdan Zimchenko**, Lviv Polytechnic National University, Ukraine **16.10-16.35** *Methods of ensuring the trust in artificial intelligence* **Eduard Manziuk**, Khmelnytskyi National University, Ukraine

	16.35-17.00
	Modeling of Negotiations Between Supply Chain Participants Based on a Multi-Agent System
	Eugene Fedorov and Olga Nechyporenko, Cherkasy State Technological University, Ukraine
	17.00-17.25
	Post-Train Adaptive MobileNet for Fast Anti-Spoofing
	Kostiantyn Khabarlak, Dnipro University of Technology, Ukraine
Awards and Close Ceremony **May 27th 2022** **15.45-16.15** Moderators: Tetiana Hovorushchenko, Sergii Lysenko	**15.45-16.15** *Awards and Close Ceremony*

Section Sessions Schedule

Section Sessions	Presentations
Section Session 1 Intelligent Information Technologies **May 26th 2022 09.00-11.00** Moderators: **Tetiana Hovorushchenko**, Yelyzaveta Hnatchuk, Olga Pavlova	Nataliya Boyko and Vladyslav Mykhailyshyn *Methods of Searching for Associative Rules for Inhomogeneous Data in Semantic Networks* Nataliya Boyko and Oleksandr Tkachyk *Frequency pattern growth algorithm (FP) for multimodal data extraction* Oleg Bisikalo, Olesia Boivan, Oksana Kovtun and Viacheslav Kovtun *Research of the influence of phonation variability on the result of the process of recognition of language units* Lyudmyla Yasinska-Damri, Sergii Babichev and Igor Liakh *Comparison Analysis of the Pearson's Phi-Square Test and Correlation Metric Effectiveness to Form the Subset of Differently Expressed and Mutually Correlated Genes* Christopher Nnamene, Serhii Lupenko, Oleksandr Volyanyk and Oleksandra Orobchuk *Computer Ontology of Mathematical Models of Cyclic Space-Time Structure Signals* Oleksandr Gordieiev, Vyacheslav Kharchenko, Daria Gordieieva, Inna Kondius and Nataliia Lishchyna *Area of Interest Based Assessment of Software Interface Usability for Human-Computer Interaction Using Eye-Tracking* Lubomir Sikora, Natalia Lysa, Rostyslav Tkachuk, Bohdana Fedyna and Olga Fedevych *Information and Cognitive Components of Knowledge Formation in Procedures for Assessing Dynamic Situations in Cyber-Physical* Bohdan Durnyak, Mikola Lutskiv and Petro Shepita *Fuzzy Model of Raster Transformation of Square Elements*
Section Session 1 Intelligent Information Technologies **May 26th 2022 14.00-15.30** Moderators: Tetiana Hovorushchenko, Yelyzaveta Hnatchuk, **Olga Pavlova**	Vyacheslav Gorev, Alexander Gusev and Valerii Korniienko *The use of the Kolmogorov–Wiener filter for prediction of heavy-tail stationary processes* Tetiana Shmelova, Yuliya Sikirda, Maxim Yatsko and Mykola Kasatkin *Collective Models of the Aviation Human-Operators in Emergency for Intelligent Decision Support System* Oleksandr Martynyuk, Oleksandr Drozd, Anatoliy Sachenko, Kostiantyn Zashcholkin and Igor Mileiko *Model for Verification of Intelligence of Multiagent Systems* Serhiy Balovsyak, Khrystyna Odaiska, Yuriy Roman, Ihor Fodchuk and Elena Zaitseva *Analysis of X-ray moiré images using artificial neural networks*

	Oleg Odarushchenko, Elena Odarushchenko, Olena Kopishynska, Oleksandr Rudenko and Anatoliy Gorbenko *Improving the Accuracy of Software Reliability Modeling by Predicting the Number of Secondary Software Defects* Svitlana Terenchuk, Yuliia Riabchun, Nataliia Poltorachenko, Mykyta Poliakov and Vitaly Levashenko *Information technology of adolescents` professional self-identification* Andriy Krysovatyy, Hrystyna Lipianina-Honcharenko, Svitlana Sachenko, Oksana Desyatnyuk and Arkadiusz Banasik *Recognizing the Fictitious Business Entity on Logistic Regression Base*
Section Session 1 Intelligent Information Technologies **May 27th 2022** **11.30-13.00** Moderators: Tetiana Hovorushchenko, **Yelyzaveta Hnatchuk**, Olga Pavlova	Oleksandr Tymchenko, Orest Khamula, Svitlana Vasiuta, Olha Sosnovska and Oksana Mlynko *A Comparison of Methods for Identifying the Priority Hierarchy of Influencing Factors* Vladimir Morkun, Natalia Morkun, Oleksandra Serdiuk, Alona Haponenko and Artem Boyarchuk *Thickener control on the basis of ultrasonic measurements and fuzzy inference* Iryna Moiseienko and Ivanna Droniuk *Theoretical and Applied Principles of Information Technology for Anti-Money Laundering* Yelyzaveta Hnatchuk, Alla Herts, Andrii Misiats, Tetiana Hovorushchenko and Krishna Kant Singh *Covid'19 Vaccination Decision-Making Method and Subsystem Based on Civil Law* Volodymyr Morkun, Gerhard Fischerauer, Natalia Morkun, Vitalii Tron and Alona Haponenko *Determining rock varieties on the basis of fuzzy clustering of ultrasonic measurement results* Pavlo Radiuk, Olga Pavlova, Houda El Bouhissi, Volodymyr Avsiyevych and Volodymyr Kovalenko *Convolutional Neural Network for Parking Slots Detection* Yaroslav Hnatchuk, Alina Hnatchuk, Ivan Hlukhov, Ivan Karatnyk and Artem Boyarchuk *Intelligent information technology for organizing swimming competitions*

Section Sessions	Presentations
Section Session 2 Systems of Information Security **May 26th 2022** **11.30-13.00** Moderators: Oleh Savenko, **Sergii Lysenko**	Volodymyr Sabat, Lyubomyr Sikora, Bohdan Durnyak, Nataliia Lysa and Olga Fedevych *Information technologies of active control of complex hierarchical systems under threats and information attacks* Oleg Kalyta, Iurii Krak, Olexander Barmak, Waldemar Wojcik and Pavlo Radiuk *Method of Facial Geometric Feature Representation for Information Security Systems* Bohdan Savenko, Antonina Kashtalian, Tomas Sochor and Andrii Nicheporuk *Self-organized distributed anomaly detection system in computer systems based on the principal components method* Mykola Stetsyuk, Antonina Kashtalian, Andrze Kwiecień and Oleg Sachenko *Method of Ensuring the Failure Resistance of Specialized Information Technologies Under the Influence of Malicious Software* Mykhailo Kasianchuk, Ihor Yakymenko, Vasyl Yatskiv, Mikolaj Karpinski and Solomiya Yatskiv *Method of Multi-Bit Numbers Multiplication in Residue Number System for Asymmetric Cryptosystems*
Section Session 2 Systems of Information Security **May 27th 2022** **09.00-11.00** Moderators: Oleh Savenko, **Sergii Lysenko**	Yurii Klots, Vira Titova, Natalia Petliak, Viktor Cheshun and Abdel-Badeeh M. Salem *Research of the Neural Network Module for Detecting Anomalies in Network Traffic* Sergiy Gnatyuk, Oleksiy Yudin, Viktoriia Sydorenko, Artem Polozhentsev and Tetiana Smirnova *The Model for Calculating the Quantitative Criteria for Assessing the Security Level of Information and Telecommunication Systems* Sergii Lysenko, Kira Bobrovnikova, Bohdan Savenko, Piotr Gaj and Oleg Savenko *Botnet Detection Approach Based on DNS* Kira Bobrovnikova, Sergii Lysenko, Ivan Hurman and Andrzej Kwiecień *Machine Learning Based Techniques for Cyberattacks Detection in the Internet of Things Infrastructure* Anastasiia Nicheporuk, Serhii Tabenskyi, Pavlo Rehida, Oleg Savenko and Andrii Nicheporuk *Centralized distributed system for cyberattack detection in corporate network based on multifractal analysis* Dmytro Denysiuk, Tomas Sochor and Mariia Kapustian *Proof of stake and Proof of work approach for malware detection technologies*

Section Sessions	Presentations
Section Session 3 Computer systems and networks **May 26th 2022** **15.45-17.15** Moderators: **Andrii Nicheporuk**, Kira Bobrovnikova	Lesia Mochurad and Natalya Kustra *Modeling the Distribution of Infectious Diseases Using Parallel Calculations* Vladimir Lukin, Sergey Krivenko, Fangfang Li, Sergey Abramov and Victor Makarichev *On Image Complexity in Viewpoint of Image Processing Performance* Oleksandr Drozd, Illya Baskov, Oleksandr Martynyuk, Kostiantyn Zashcholkin and Myroslav Drozd *Augmented Checkability of LUT-oriented Circuits in FPGA-based Components of Safety-Related Systems* Oleksandr Letychevskyi, Volodymyr Peschanenko and Serhii Horbatiuk *Consensus protocol security analysis using an algebraic virtual machine* Tetiana Hovorushchenko, Peter Popov, Mariia Kapustian, Denys Lyubovetskyi and Olha Hovorushchenko *Cyber-Physical System for Donor Organs' Rejection Risks Prevention Based on Donor and Recipient Health Monitoring* Vladimir Lukin, Fangfang Li, Galina Proskura, Irina Vasilyeva and Galina Chernova *Image Classification Accuracy Analysis for Three-channel Remote Sensing Data* Myroslava Dubnevych, Tetyana Holubnyk, Ludmyla Maik, Zoryana Selmenska, Inna Skarga-Bandurova and Bohdan Kovalskyi *Analysis of the effectiveness of means to achieve optimal color balancing in obtaining a digital photographic image*
Section Session 3 Computer systems and networks **May 27th 2022** **14.00-15.30** Moderators: Andrii Nicheporuk, **Kira Bobrovnikova**	Anatoliy Melnyk, Yurii Morozov, Bohdan Havano and Petro Hupalo *Intellectual tools to prevent road accidents by monitoring the driver's physiological state* Kateryna Yalova, Kseniia Yashyna, Leonid Dranishnikov and Abdel-Badeeh M. Salem *Computer System for Evaluation the Reliability of Technological Systems* Volodymyr Hnatushenko, Olga Korobko, Vasyl Lytvyn, Sergey Nikulin and Kateryna Sergieieva *Information System for Estimation Spatial Characteristics of Lineament Networks Derived from Satellite Images* Nataliia Vozna, Andriy Segin, Igor Pitukh, Artur Voronych and Luybov Nykolaychuk *Mathematical Fundamentals of Structural and Entropic Analysis of Digital Data Flows*

Roman Sytnyk, Viktoriia Hnatushenko and Volodymyr Hnatushenko
Prototyping Fully Decentralized Supply Chain Management Information System Using Blockchain

Yaroslav Nykolaychuk, Taras Hrynchyshyn, Yaroslav Petrashuk, Volodymyr Hryha and Zinoviy Osypenko
Optoelectronic cyber-physical system of monitoring of nature protection areas

Olga Pavlova, Andriy Bashta, Sofiia Kravchuk, Yaroslav Hnatchuk and Houda El Bouhissi
Augmented reality based technology and scenarios for route planning and visualization