ICyberPhys 2024

Programme of the 1st International Workshop on Intelligent & CyberPhysical Systems (ICyberPhyS-2024)

Khmelnytskyi, Ukraine, June 28, 2024

Time regarding the Kyiv

Countries which represent authors	Time in countries regarding the time of Ukraine
United States of America	- 5
United Kingdom	- 2
Poland	- 1
Czech Republic	- 1
Slovakia	- 1
Austria	- 1
Algeria	- 2
Spain	- 1
Egypt	The same
Kyrgyzstan	+ 3
Estonia	The same

IMPORTANT!!! All Ukrainian participants of Workshop should be connected to all sessions from shelters in order to ensure uninterrupted work during air alarms! We will not stop the Workshop's sessions in case of an air alarm!

All workshop participants should have a backup connection option (charged mobile phone with a connected mobile internet) to ensure uninterrupted operation in case of emergencies – power outages, etc.

Timetable of the Workshop

Time (Kyiv)	June 28th 2024
9.30	**Welcome & Plenary Session**
9.45	Section Session 1 Intelligent Systems, Green Technologies, Smart City & Smart House, IoT-Systems
11.45	Coffee Break
12.00	Section Session 1 Intelligent Systems, Green Technologies, Smart City & Smart House, IoT-Systems
13.45	Coffee Break
14.00	Section Session 2 Computer &Cyberphysical Systems, Security and Protection of Computer & Cyberphysical Systems
16.30	Coffee Break
16.45	**Awards and Close Ceremony**

Presentation timing:

Session presentations – 10 minutes + 5 minutes Q&A **(15 minutes for 1 speaker!)**.

Testing of Connection:

June 28th, 2024, 09.15-09.30 (9.15 AM – 09.30 AM), Kyiv time

Zoom links:

Plenary session	**https://us02web.zoom.us/j/89579767497?pwd=bWFFYThQbm1VSlM3SVdnRDNOampBZz09** Meeting ID: 895 7976 7497 Password: 123456
Session 1 Intelligent Systems, Green Technologies, Smart City & Smart House, IoT-Systems	**https://us02web.zoom.us/j/89579767497?pwd=bWFFYThQbm1VSlM3SVdnRDNOampBZz09** Meeting ID: 895 7976 7497 Password: 123456
Session 2 Computer & Cyberphysical Systems, Security and Protection of Computer & Cyberphysical Systems	**https://us02web.zoom.us/j/89579767497?pwd=bWFFYThQbm1VSlM3SVdnRDNOampBZz09** Meeting ID: 895 7976 7497 Password: 123456

Plenary Sessions' Schedule

Plenary sessions	Invited presentations
Welcome & Plenary Session **June 28th 2024** **09.30-09.45** Moderators: Tetiana Hovorushchenko, Sergii Lysenko	**09.30-09.40** *Greetings from the ICyberPhys 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) **Yelyzaveta Hnatchuk**, Khmelnytskyi National University, Ukraine (Organizing Committee Chair) **09.40-09.45** *Trends of the ICyberPhys-2024* **Tetiana Hovorushchenko**, Khmelnytskyi National University, Ukraine
Awards and Close Ceremony **June 28th 2024** **16.45-17.00** Moderators: Tetiana Hovorushchenko, Sergii Lysenko	**16.45-17.00** *Awards and Close Ceremony*

Section Sessions' Schedule

Section Sessions	Presentations
Section Session 1 Intelligent Systems, Green Technologies, Smart City & Smart House, IoT-Systems **June 28th 2024** **09.45-11.45** Moderators: **Tetiana Hovorushchenko**, Yelyzaveta Hnatchuk, Olga Pavlova	Serhii Svystun, Oleksandr Melnychenko, Pavlo Radiuk, Oleg Savenko and Anatoliy Sachenko *Precision Slicing for Enhanced Defect Detection in High-Resolution Wind Turbine Blade Imagery* Lesia Mochurad, Daryna Vasylashko *Parallelization of Biosignal Processing for Real-Time Human Stress Level Classification* Vasyl Martsenyuk, Andrii Sverstiuk, Taras Dubynyak, Petro Mykulyk, Nadia Shostakivska and Mykola Poshyvak *Study of the temperature effect on the functioning of photodetecting lighting elements and calculation of their reliability* Oleksii Kovalchuk, Olexander Barmak, Pavlo Radiuk and Iurii Krak *ECG Arrhythmia Classification and Interpretation using Convolutional Networks for Intelligent IoT Healthcare System* Mikola Lutskiv, Petro Shepita, Houda El Bouhissi, Vitaly Lohin and Oleg Yarema *Simulation of Normal Exponential Transformation of Dark Tone Images* Bohdan Durnyak, Petro Shepita, Lyubov Tupychak, Yurii Petriv, Julia Shepita *Post-press product quality assessment models for the IIoT system* Rostyslav Zatserkovnyi, Petro Kutsyk, Roksoliana Zatserkovna, Volodymyr Maik and Peter T. Popov *Enhancing adapted print publication accessibility via text-to-image synthesis* Iryna Zasornova, Tetiana Hovorushchenko and Mykola Fedula *Information technology for joint decision making in machine embroidery with means of augmented reality*
Section Session 1 Intelligent Systems, Green Technologies, Smart City & Smart House, IoT-Systems **June 28th 2024** **12.00-13.45** Moderators: Tetiana Hovorushchenko, Yelyzaveta Hnatchuk, **Olga Pavlova**	Orest Khamula, Oleksandr Tymchenko, Svitlana Vasiuta, Olha Sosnovska and Solomiya Dorosh *Development of Font Selection Method for Text Content in Immersive Technologies* Nikita Tarasov and Orest Khamula *Factors influencing the creation of Braille 3d models in additive manufacturing* Svitlana Havenko, Marta Labetska, Mykola Havenko, Valeriy Zhydetskyy and Volodymyr Lytvynenko *Diagnostics and assessment of imprint quality using pattern recognition methods and digital photography for image processing*

	Sergii Lysenko, Oleh Bondaruk , Piotr Gaj and Inna Martyniuk *Method of optimizing delay in IoT system using fog calculations* Viktor Melnyk and Anatoliy Melnyk *Method and Framework for IoT Nodes Self-Configuring with Cloud-Based Automatic Design and Synthesis Tools* Olga Pavlova, Tetiana Hovorushchenko, Andrii Kuzmin, Tymur Isayev and Houda EL Bouhissi *Method of early landfill fire detection using the YOLOv8 neural network* Khrystyna Lipianina-Honcharenko, Nataliia Maika, Anatoliy Sachenko, Lukasz Kopania and Mariana Soia *A Cyclical Approach to Legal Document Analysis: Leveraging AI for Strategic Policy Evaluation*
Section Session 2 Computer & Cyberphysical Systems, Security and Protection of Computer & Cyberphysical Systems **June 28th 2024** **14.00-16.30** Moderators: Oleh Savenko, **Sergii Lysenko**, Andrii Nicheporuk	Dmytro Zubov, Ayman Aljarbouh, Andrey Kupin and Gainikamal Batayeva *PV-driven Smart Islanded Microgrid: Intelligent I2C Arduino-based Demand Energy Management* Volodymyr Sabat, Bohdan Durnyak, Myroslava Kulynych, Yurii Lozynskyi and Pavlo Hibey *Decision-making support of emergency risk identification in complex hierarchical control systems* Yevheniy Sierhieiev, Vadym Paiuk, Andrii Nicheporuk, Andrzej Kwiecien *Detection and prediction of the vulnerabilities in software systems based on behavioral analysis with machine learning* Vira Titova, Yurii Klots, Victor Cheshun, Nataliia Petliak and Abdel-Badeeh M. Salem *Detection of Network Attacks in Cyber-Physical Systems Using a Rule-Based Logical Neural Network* Vladimir Barannik, Mykhailo Babenko, Yurii Babenko, Kateryna Yalova and Kseniia Yashyna *Modification of the RGB Color Space in MS Word Documents for Steganographic Information Protection* Dmytro Denysiuk, Tomas Sochor, Mariia Kapustian, Antonina Kashtalian and Andriy Drozd *A method for detecting botnets in IT infrastructure using a neural network* Vasyl Stetsyuk, Mykola Stetsyuk, Yuriy Stetsyuk, Oleksandr Kozelskiy and Piotr Gaj *Architecture of the system with a subsystem of providing fault tolerance, survivability and information protection of specialized information technology* Maksym Chaikovskyi, Inna Chaikovska, Tomas Sochor, Inna Martyniuk and Oleksii Lyhun *Comprehensive approach to the detection and analysis of polymorphic malware*

	Igor Golovko, Oleg Savenko, Petro Vizhevskiy, Olexandr Klein, Abdel-Badeeh M. Salem *Obfuscation technologies of high-level source code using artificial intelligence* Maxim Prodeus, Andrii Nicheporuk, Andrzej Kwiecien, Dmytro Martiniyuk, Oleksii Lygun *Subsystem of anomaly detection in the Smart House system based on machine learning*