



June 11-12, 2025
Ternopil, Ukraine
<https://citi.tntu.edu.ua/>

COMPUTER INFORMATION TECHNOLOGIES IN INDUSTRY 4.0 (CITI-2025)

The 3rd International Workshop

WORKSHOP PROGRAMME

Organizers, Partners and Sponsors



Ternopil Ivan Puluj National
Technical University
**Member Of European
University Association**

FAAI - 2022-1-PL01-KA220-HED-000088359



Association of Science
and Education of Ukraine



Kharkiv National University
of Internal Affairs



**Co-funded by
the European Union**

University of Bielsko-Biala, Poland



CEUR-WS.org

11-12, June, 2025, Ternopil, Ukraine

**The workshop will be held in the Zoom environment
according to the schedule of participants' performances
shown below**

Join a Zoom meeting

<https://us02web.zoom.us/j/3734325240?pwd=UENyUIE3bnBsdHFHanFHY1FrbnZIUT09>

Meeting ID: 373 432 5240

Passcode: 654321

Attention!

During the workshop, changes are possible in accordance with the situation in Ukraine. In particular, in the case of air alarms, there will be breaks and continuation of the workshop will be after the air alarms are over

CITI-2025 General Timetable

June 11

	9:45-10:10	Registration of workshop participants
	10:10	Workshop opening
	10:10-10:20	Welcome speech of the workshop organizers and PC members
1	10:20-10:30	<i>Serhii Vladov, Victoria Vysotska, Vasyl Lytvyn, Nataliia Vladova and Yelyzaveta Sahun</i> Intelligent self-monitoring and signal restoring system for the helicopter turboshaft engines gas temperature sensor with adaptive predicting https://youtu.be/85jOKJI7DGs
2	10:30-10:40	<i>Nataliia Petliak, Yurii Klots, Mikolaj Karpinski, Vira Titova and Dmytro Tymoshchuk</i> Hybrid system for detecting abnormal trauc in IoT https://youtu.be/jEPrNbQ4otA
3	10:40-10:50	<i>Andrii Stanko, Iryna Didych, Andrii Mykytyshyn, Mykola Mytnyk and Serhii Lupenko</i> Prediction of CO levels in the air based on UV index using artificial intelligence algorithms https://youtu.be/dle6DclrA3I
4	10:50-11:00	<i>Viacheslav Kovtun, Oleh Yasniy and Oleh Kovaliuk</i> Markov Model of Controlled Load Distribution in the Edge-IoT Subsystem https://youtu.be/QMcctJ-xgZE
5	11:00-11:10	<i>Mykhaylo Petryk, Oleksiy Tsebriy, Yurii Stoianov and Oksana Petryk</i> Automated Deal Amount Validation in CRM Systems Using Large Language Models https://youtu.be/S6wij9Wllys
6	11:10-11:20	<i>Andrii Kovtko, Volodymyr Savkiv, Halyna Kozbur, Ihor Kozbur and Rostyslav Trembach</i> Integration of mutation testing into unit test generation using large language models https://youtu.be/XEw8mViZ29c

11-12, June, 2025, Ternopil, Ukraine

7	11:20-11:30	<i>Viktor Khomyshyn, Oleh Pastukh, Vasyl Yatsyshyn, Nataliya Zagorodna and Ihor Baran</i> Comparative analysis of ensemble methods for outlier detection in real estate https://youtu.be/HZxIsv5vnNg
8	11:30-11:40	<i>Yurii Palianytsia, Vasyl Dunets, Grygorij Khymych, Oleg Zastavnyy and Alexander Los</i> Computer Simulation of Ultrawideband Vivaldi Active Phased Array Antenna https://youtu.be/EqjY5vKMgpc
9	11:40-11:50	<i>Volodymyr Vozniak, Oleksander Barmak and Iurii Krak</i> Image Matching of Satellite and UAV for Visual Place Recognition Using YOLO https://youtu.be/3xb5Yq9m_sk
10	11:50-12:00	<i>Danylo Stukhliak, Oleg Totosko, Petro Stukhliak, Oleh Yasniy and Andrii Stanko</i> Neural networks for processing experimental studies of the modulus of elasticity and hardness of epoxy composites containing Al₂ O₃ , ZnO and PTFE https://youtu.be/3UY6Kbjt3Vc
	12:00-12:30	Coffee break
11	12:30-12:40	<i>Igor Boyko, Marharyta Prachuk, Victoria Hykava , Igor Cherevko and Anatolii Doroshenko</i> Software System for Identifying Diffusion Parameters in Microporous Samples https://youtu.be/CEToeIGv5h0
12	12:40-12:50	<i>Mykhaylo Palamar, Oleksandr Liashchuk, Mykhaylo Strembitskyi, Andrii Chaikovskiy and Andrii Kondratiuk</i> Information System for Direction Finding of Signal Sources in the Ultra-long Range https://youtu.be/aJkQx3YeF3o
13	12:50-13:00	<i>Nataliya Bernatska, Elvira Dzhumelia and Orest Kochan</i> The concept of development a digital twin based on the FIWARE framework for effective air quality monitoring in urban areas https://youtu.be/yecS3JrJkrk

14	13:00-13:10	<i>Ruslan Kozak, Yuriy Skorenkyy, Oleksandr Kramar, Taras Lechachenko and Halyna Brevus</i> Cybersecurity provisioning for Industry 4.0 digital twin with AR components https://youtu.be/p_hNYhLknIk
15	13:10-13:20	<i>Andrii Melnyk, Lesia Dmytrotso, Oleh Palka, Yaroslav Vasylenko and Nataliya Klymuk</i> Dynamic Test Case Prioritisation for Mobile Applications Based on Real User Behaviour Data https://youtu.be/kwe3gP5DOW4
16	13:20-13:30	<i>Ivan Borodii, Illia Fedorovych, Halyna Osukhivska, Diana Velychko and Roman Butsii</i> Comparative Analysis of Large Data Processing In Apache Spark Using Java, Python and Scala https://youtu.be/q63gnEwbljE
17	13:30-13:40	<i>Yuliya Averyanova, Maxim Ivanytskyi and Yevheniia Znakovska</i> Significant weather areas mapping for UAV route planning https://youtu.be/ZUaARLxgdSM
18	13:40-13:50	<i>Nguyen Thi Huyen Chau and Quan Trong The</i> An Appropriate Post - Filtering for GSC Beamformer https://youtu.be/kuAcP4a5lf4
June 12		
	10:45-11:00	Registration of workshop participants
1	11:00-11:10	<i>Vasyl Martsenyuk, Liudmyla Golovkova, Halyna Nahorniak, Oksana Garmatiuk and Yurii Dyshkant</i> Development of leadership competences in bachelor's and master's students as a factor in the formation of intellectual capital of modern entrepreneurship in the context of digitalization https://youtu.be/jG31zJ5UCfA
2	11:10-11:20	<i>Andriy Sverstiuk, Uliana Polyvana, Lyubomyr Mosiy, Olha Mosiy, Roman Butsiy</i> Approaches to the Development of Information Technology for ECG Analysis to Evaluate Quality of Life in Smart Cities https://youtu.be/OS2R_VBdIZw

3	11:20-11:30	<i>Mykola Khvostivskyi, Liliia Khvostivska, Iryna Dediv, Vasyl Yatskiv and Oleksandra Kuchvara</i> Method and computer tool for synphase prediction of computer network traffic load level https://youtu.be/E6mn2z37j_I
4	11:30-11:40	<i>Petro Samuliak, Roman Tkachuk, Pavlo Tymkiv, Oksana Bahrii-Zaiats and Oleg Zastavnyy</i> A mathematic model of electrorretinogram for titanium dioxide (TiO₂) neurotoxicity risk assessment https://youtu.be/SW_jPNZUQkU
5	11:40-11-50	<i>Yaroslav Kotov, Evhenia Yavorska, Bohdan Yavorskiy, Oksana Dozorska and Vasyl Yatskiv</i> Conceptual Approaches to Data Transmission for AI-Assisted Patient Assessment https://youtu.be/2o8P-Utspuc
6	11:50-12:00	<i>Dmytro Vakulenko, Lyudmila Vakulenko, Sviatoslav Gandzyuk and Nadiya Gandzyuk</i> Criteria for assessing status to form individual training trajectory https://youtu.be/aKb0hIYoJ1A
	12:00-12:30	Coffee break
7	12:30-12:40	<i>Ihor Javorskyj, Roman Yuzefovych, Roman Pelypets, Roman Sliepko, Oleh Lychak and Pavlo Semenov</i> Analysis of mean square estimator errors of basic frequency for periodically non-stationary random processes https://youtu.be/ZryyQE61H48
8	12:40-12:50	<i>Tetiana Hovorushchenko, Taras Dubynyak, Liliana Dzhydzhora, Natali Yuryk and Yuriy Yuryk</i> Computer modeling of the process of shape deviations parameters control and analysis https://youtu.be/VkPqMQ7LRZ8
9	12:50-13:00	<i>Mykhaylo Strembitskyi, Myroslava Yavorska, Andriy Palamar, Roman Kochan and Valeriy Yeromenko</i> A comparative study of bug algorithms for robot navigation https://youtu.be/IPBKVREIRmY

10	13:00-13:10	<i>Ihor Konovalenko, Volodymyr Medvid, Oleksandr Shovkun, Kateryna Marushchak, Denys Baran and Bohdan Rusyn</i> Automated Approaches to Determining Chicken Eggs' Parameters Based on Their Digital Images https://youtu.be/hT_uJYS0ZgQ
11	13:10-13:20	<i>Denys Olianin, Halyna Tsupryk, Tetiana Hovorushchenko, Oksana Bahrii-Zaiats and Igor Andrushchak</i> Transformer Neural Networks in Industry 4.0 https://youtu.be/-lcTBSS5ugw
12	13:20-13:30	<i>Hryhorii Habrusiev, Vasyl Oleksiuk, Pavlo Chopyk, Iryna Habrusieva and Sergii Alilujko</i> On the deployment of an open-source digital learning ecosystem https://youtu.be/pRkyyXo4ULE
13	13:30-13:40	<i>Oleksandr Bryk, Oleh Pastukh, Yuriy Ushenko, Dmytro Uhryn and Ihor Maykiv</i> Multi-Parameter Hemodynamic Monitoring via Machine Learning: A Data-Driven Framework for Cardiovascular Physiology https://youtu.be/wRwWS3Ub_Po
14	13:40-13:50	<i>Dmytro Vakulenko, Olena Hevko, Liudmyla Vakulenko, Irina Smachylo and Zoryana Kocherga</i> Telemedicine and Psychocorrection: A New Paradigm through Healthcare Data Processing Innovations https://youtu.be/j1q_5k_E9iM

TIME FOR PRESENTATIONS:

- paper presentation at the regular session – 5 min.
- discussion, questions – 5 min.

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Organized by:
Ternopil Ivan Puluj National Technical University,
Faculty of Applied Information Technologies and Electrical Engineering

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