INFORMATION TECHNOLOGIES: THEORETICAL AND APPLIED PROBLEMS (ITTAP-2025)

The 5th International Workshop

October22-24, 2025
Ternopil, UKRAINE
Opole, POLAND
https://ittap.tntu.edu.ua/

CONFERENCE PROGRAMME

Ternopil Ivan Puluj National Technical University
Member Of European University Association

https://tl.ubb.edu.pl
Erasmus+ project no: 2023-2-PL01-KA220-HED-000179445

ITTAP 2025 General Timetable

October 22		
	9:50-10:00 (10)	**Conference opening (Workshop 1)**
1	**10:00-10:10**	**Olga Solovei.** Proactive Concurrency Control for Data Lakehouse: A Meta-Scheduling Framework for Urban Construction Data Pipelines
2	**10:10-10:20**	**Vladyslav Khaidurov, Hanna Yuzhakova and Yurii Bulavintsev.** Modifications of method for solving inverse heat and mass transfer problems
3	**10:20-10:30**	**Dawid Pawuś, Helena Ibrahim, Karol Fabianek and Grzegorz Mehlich.** Digital Health Data Infrastructure and Analytics with Focus on the Polish Regional Centre
4	**10:30-10:40**	**Viktor Khomyshyn, Oleh Pastukh, Vasyl Yatsyshyn, Ihor Baran and Yuriy Ushenko.** Meta-ensemble methods for outlier detection in real estate
5	**10:40-10:50**	**Volodymyr Hotovych, Oleh Nazarevych, Grigorii Shymchuk, Liubomyr Matiichuk and Yurii Maksymiak.** Multi-layer secured architecture of a local automated centralized alert system
6	**10:50-11:00**	**Roman Yuzefovych, Ihor Javorskyj, Oleh Lychak, Pavlo Semenov and Roman Khmil.** Model of vibrations as periodically non-stationary random processes for identification of the condition of electrical motor
7	**11:00-11:10**	**Oleksandr Povstianoi, Viktor Denysiuk and Yurii Lapchenko**. Information and measurement system for analyzing images of fundus tissue using computer-integrated technologies
8	**11:10-11:20**	**Danylo Stukhliak, Oleg Totosko, Petro Stukhliak, Olena Vynokurova and Danyl Zhytnyk.** Comparison of interpolation methods for modelling the characteristics of oxide-containing epoxy composites
9	**11:20-11:30**	**Ivan Osiichuk, Nataliya Zagorodna, Dmytro Dmytriv, Inna Skarga-Bandurova and Oleksandr Zaiets.** Comparative analysis of data representing models using e-commerce data
10	**11:30-11:40**	**Andrii Voloshchuk, Halyna Osukhivska, Mykola Khvostivkyi, Andrii Sverstiuk and Lillia Khvostivska.** Component Method for Analyzing the Energy Consumption Signal as a Periodically Correlated Random Process
	11:40-12:00 (20)	**Coffee brakes**
11	**12:00-12:10**	**Roman Voliansky, Nina Volianska, Vitaly Yakovenko, Oleksandr Tkalenko and Vitaliy Kuznetsov.** Numerical models of novel discrete-time chaotic systems
12	**12:10-12:20**	**Lyubomyr Mosiy, Mykhailo Fryz, Yurii Palianytsia, Bogdana Mlynko and Olha Mosiy.** Mathematical Modeling and Statistical Validation of the Amplitude Variability Function of Electrocardiographic Signals
13	**12:20-12:30**	**Vasyl Trysnyuk, Kirill Smetanin, Ihor Humeniuk and Victor Shumeiko.** Hybrid Data Protection Method Combining Homomorphic Encryption and Steganography
14	**12:30-12:40**	**Mykola Stashkiv, Iaroslav Lytvynenko, Oleh Lyashuk, Viktor Stashkiv and Vasyl Olyvko.** Arduino-Based Triaxial Measurement System for Vibration Monitoring in Mobile Machinery
15	**12:40-12:50**	**Tetiana Hovorushchenko, Yurii Voichur, Ludmila Kravchuk, Andrii Balan and Artem Boyarchuk.** Cyber-physical system for monitoring water resources
16	**12:50-13:00**	**Bohdan Solovei and Oleksandr Terentyev.** Bayesian Long Short-Term Memory Model for Crane Stability Prediction and Uncertainty Quantification in Safety Monitoring Systems
17	**13:00-13:10**	**Yurii Zhyshchynskyi, Serhiy Horiashchenko and Yehor Solomianyi**. Object Path Modeling with External Disturbance Compensation and Adaptive Replanning
18	**13:10-13:20**	**Nadiia Marchenko, Hanna Martyniuk, Olena Monchenko and Larysa Chubko.** Information and analytical support for technical monitoring systems with a

		multi-level structure
19	**13:20-13:30**	**Roman Sikorskyi and Oleh Harasymchuk.** A multi-stage model for detecting and preventing SQL injections in the XAMPP/MySQL environment
20	**13:30-13:40**	**Rostyslav Zatserkovnyi and Roksoliana Zatserkovna.** Predictive modeling of academic outcomes based on socioeconomic variables
21	**13:40-13:50**	**Mykola Mitikov, Natalia Guk, Roman Voliansky, Mykhailo Mozhaiev and Andri Pranolo.** Mathematical Modeling And Experimental Evaluation Of The Information Content Completeness At Fixed Memory Volumes: Application Of Compression Algorithms
22	**13:50-14:00**	**Roman Belous, Taras Trysnyuk, Kyrylo Smetanin, Vladyslav Vasylenko and Dmytro Mosiichuk.** Improving Data Rebalancing in Distributed Databases Using Adaptive and Elitist Genetic Algorithms
23	**14:00-14:10**	**Ihor Berezutskyi and Tetyana Honcharenko.** The sub-system for project methodology choosing in the information technology
24	**14:10-14:20**	**Liliia Babinets, Nataliia Botsyuk, Iryna Halabitska, Nadiia Gashchyn and Svitlana Konovalchuk.** Development of a Personalized Prognostic Model for Assessing the Risk of Exocrine Pancreatic Insufficiency in Patients with Chronic Pancreatitis
25	**14:20-14:30**	
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October 23		
	9:50-10:00 (10)	**Conference opening (Workshop 2)**
1	**10:00-10:10**	**Dmytro Tymoshchuk, Iryna Didych, Oleh Yasniy, Andrii Mykytyshyn and Viacheslav Kovtun.** AutoML TPOT with XAI analysis: Optimization and Interpretation of a Machine Learning Model for the Classification of Epoxy Composites
2	**10:10-10:20**	**Mykola Stetsiuk, Yurii Klots, Dmytro Tymoshchuk, Mikolaj Karpinski and Nataliia Petliak.** Detection of Multi-Vector Attacks in IoT Networks: A Graph Attention Network-Based Approach
3	**10:20-10:30**	**Pavlo Kruk, Oleksii Matsiievskyi and Igor Achkasov.** Neural Network-Based Automation of Spatial Solutions in Modern Interior Design
4	**10:30-10:40**	**Serhii Lupenko, Michał Tomaszewski, Anna Bryniarska, Andrii Pavlyshyn and Oleksandra Orobchuk.** Conceptual Modeling of the Subject Area 'Aseptic Wound' for AI–Based Medical Systems
5	**10:40-10:50**	**Igor Boyko, Julia Seti, Oksemana Bahrii-Zaiats and Oksana Petryk.** Identification of Lennard–Jones potential parameters from concentration distributions using machine learning
6	**10:50-11:00**	**Volodymyr Levytskyi, Oleksii Lopuha and Pavlo Kruk.** Traffic optimization in a simple network using Deep Reinforcement Learning
7	**11:00-11.10**	**Yurii Halias, Khrystyna Lipianina-Honcharenko, Myroslav Komar and Mykola Telka. Emotion-Aware Film Recommendation with Heterogeneous Graph Neural Networks**
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10	**11:30-11:40**	**Ihor Konovalenko, Vadim Vadim Piscio and Andriy Hospodarskyy**.Determining the volume of revolutionary bodies from two-dimensional photographic images ⋆
	11:40-12:00 (20)	**Coffee brakes**
11	**12:00-12:10**	**Serhii Dolhopolov and Tetyana Honcharenko.** Multimodal Sentiment Analysis with Grad-CAM for Urban Revitalization
12	**12:10-12:20**	**Nadia Kryva, Nadia Gashchyn, Serii Glado, Halyna Semenyshyn and Nataliya Stadnyk.** Microprocessor system for calibrating the antenna position sensor⋆
13	**12:20-12:30**	**Vladyslav Vasylenko, Serhii Zaitsev, Vasyl Trysnyuk and Taras Trysnyuk**. Method of adaptation of interleaving/deinterleaving devices in wireless data transmission systems with ldpc codes
14	**12:30-12:40**	**Vasyl Ustimenko and Tymoteusz Chojecki.** On the expanding graphs of large girth and algorithms of key establishment
15	**12:40-12:50**	**Oleg Dekusha, Svitlana Kovtun, Ievgen Antypov, Valeriy Gorobets and Artem Riabikov.** Modelling the hydrodynamics of wind flow around a building in the conditions of surrounding buildings
16	**12:50-13:00**	**Volodymyr Semchyshyn and Dmytro Mykhalyk.** Data-Driven Decision-Making Methods and Hierarchical Analysis in Cloud-Based Medical Service Management Systems
17	**13:00-13:10**	**Denis Gaiduchek, Liudmyla Kryvoplias-Volodina, Volodymyr Kostin, Zinaida Burova and Oleksandr Zaporozhets.** Synthesis of an Analytical System Prototype Using MQTT and AWS in the Industry 4.0 Context
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19	**13:20-13:30**	**Jakub Osuchowski, Rafał Gasz, Barbara Jantos and Michał**

		Wierzbicki. Comparison of 3D Data Acquisition Methods for Wound Size Assessment in Crisis Situations

October 24		
	10:00-10:30	**Final session** **Conference summary. Discussion of the presented papers.**

TIME FOR PRESENTATIONS
Paper presentation at the regular session – 5 min.
Discussion, questions – 5 min.

Organized by:
Ternopil Ivan Puluj National Technical University,
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Opole University of Technology

October 22

Link Conference: **https://tube5.tntu.edu.ua/rooms/0mq-m57-h5b-h8s/join**
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Conference opening
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		Olena Vynokurova and Danyl Zhytnyk. Comparison of interpolation methods for modelling the characteristics of oxide-containing epoxy composites	
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		Systems	
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October 24		
Time		**Final session**
1	10:00-10:30	**1. Conference summary. Discussion of the presented papers. 2. Meeting of the participants, Program and Organizing Committees. Feedbacks on the conference. Discussion on the possible ways of improvement for future.**

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