



October 19-21, 2026
Ternopil, UKRAINE
<https://ittap.tntu.edu.ua/>

INFORMATION TECHNOLOGIES: THEORETICAL AND APPLIED PROBLEMS (ITTAP-2026)

The 6th International Workshop

CONFERENCE PROGRAMME



**Ternopil Ivan Puluj National
Technical University**
Member Of European University
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Українське
науково-освітнє ІТ товариство
Ukrainian
Scientific and Educational IT Society

**19-21, October, 2026, Ternopil, UKRAINE; Opole, POLAND; Halmstad, SWEDEN;
Kyiv, UKRAINE; Aqaba, JORDAN**

ITTAP 2026 General Timetable

Workshop 1

Applied Information Technologies

<https://tube5.tntu.edu.ua/rooms/7vc-7gp-jtz-mpf/join>

October 19		
	9:50-10:00 (10)	Conference opening.
1	10:00-10:10	Taras Lechachenko, Dmytro Tymoshchuk, Mariia Stadnyk, Yurii Klots Vasyl Vasylykiv Comparative Analysis of Machine Learning and Transformer-Based Models for Query Domain Classification
2	10:10-10:20	Andrii Biziuk, Oleksii Khoroshevskyi, Iryna Khoroshevskaya, Tetiana Trunova, Vladyslav Oliinyk From Label to Behavior: A Dual-Channel Method for Verifying Solo-Wargame Bot Profiles
3	10:20-10:30	Stanislav Orlov, Sergii Khlamov, Zhanna Deineko, Iryna Tabakova, Tetiana Trunova Cloud architecture using OpenAPI specification for distributed microservices-oriented information system for data processing in astronomy
4	10:30-10:40	Tetiana Hovorushchenko, Yurii Voichur, Dmytro Medzaty, Andrii Zhandra and Artem Boyarchuk Method for detecting and preventing emergency situations in the cyber-physical system "Smart Home"
5	10:40-10:50	Stanislav Orlov, Sergii Khlamov, Andrii Frolov, Zhanna Deineko, Iryna Tabakova Performance efficiency of binary communication protocols in event-driven distributed systems: mathematical and empirical analysis
6	10:50-11:00	Yuliia Seti, Igor Boyko A CAP-Crank-Nicolson Method for Quasienergy Computation in Open Driven Nanostructures
7	11:00-11:10	Marharyta Prachuk, Yuliia Seti, Igor Boyko Stress Testing Methodology for Neural Network-Based Software Systems in Nanostructure Parameter Identification
8	11:10-11:20	Maria Yukhymchuk, Viacheslav Kovtun, Volodymyr Dubovoi, Vladyslav Lesko, Yurii Ivanov Secondary Similarity Criteria for Adaptive Intelligent Control and Digital Twin Automation in Energy Microgrids
9	11:20-11:30	Szymon Nabrzuchowski, Rafał Gasz Comparative Evaluation of Modern Object Detection Algorithms for Real-Time Military Aircraft Recognition
10	11:30-11:40	Taras Lypak, Halyna Lypak, Oleksii Duda, Halyna Matsiuk Comparing prompting strategies for LLM-based user interface generation
	11:40-12:00 (20)	Coffee brakes
11	12:00-12:10	Rostyslav Zatserkovnyi, Roksoliana Zatserkovna

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		Optimizing Textbooks for Readers with Low Vision via Constraint-Based Re-Imposition
12	12:10-12:20	Vadim Romanuke Runtime efficiency of scikit-learn t-SNE and openTSNE dimensionality reduction on synthetic Gaussian datasets
13	12:20-12:30	Tymofii Tonkovyd Business process management under uncertainty: A structured review and conceptual framework
14	12:30-12:40	Petro Stukhliak, Danylo Stukhliak, Oleg Totosko Roman Zoloty Use of differential operators for detecting the boundaries of external surface layers and cluster structures in epoxy composites
15	12:40-12:50	Mykola Petrychko, Serhiy Shtovba, Yaroslav Dziubenko Benchmarking Loss Functions for Classifier Training on Imbalanced Datasets
16	12:50-13:00	Serhii Titarchuk, Petro Malezhyk, Ihor Tverdokhlib Context-oriented archival document management in the integrated information and educational environment of an educational institutions
17	13:00-13:10	Oleksii Matsiievskyi, Ihor Bosenko, Roman Mazurenko, Igor Achkasov Information Technology for Multi-Agent Verification of Digital Twins of Damaged Critical Infrastructure Objects
18	13:10-13:20	Kateryna Merkulova, Yelyzaveta Zhabska, Viktor Kozoriz Software for a Distributed Server Monitoring System Based on Consensus Algorithms
19	13:20-13:30	Nadia Kryva, Nadia Gashchyn,, Sergii Glado, Halyna Semenyshyn Adaptive Kalman Filtering for a Microprocessor-Based Antenna Position Sensor in Disturbed Field Conditions
20	13:30-13:40	Vadym Romanko, Denys Koval, Oleksandr Sribnyi, Oleg Manko, Yurii Podchashynskyi Persistent Sensor Quality in Adaptive UAV Navigation Replay
21	13:40-13:50	Vitaliy Tymoshchuk, Ihor Bodnarchuk, Dmytro Tymoshchuk, Ihor Baran Adaptive Cost-Aware SQL Result Caching for PostgreSQL Using Redis and Version-Based Invalidation
22	13:50-14:00	Yevhen Davydenko, Alyona Shved, Kateryna Antipova, Maryna Falenkova, Igor Andrushchak Pareto Set Reduction without Explicit Criteria Importance Using Dempster–Shafer Theory

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October 20		
	9:50-10:00 (10)	Conference continuation
1	10:00-10:10	Volodymyr Hotovych, Iaroslav Lytvynenko, Iryna Didych, Grigorii Shymchuk, Lesia Nazarevych Natural Gas Consumption Forecasting over an Annual Time Horizon Using a Multilayer Perceptron Artificial Neural Network
2	10:10-10:20	Ihor Vorobets, Mykhailo Fryz Compact statistical representation of log-mel spectrograms for industrial acoustic anomaly detection
3	10:20-10:30	Nataliia Blashchak, Vasyl Kryven, Liubov Tsymbaliuk, Volodymyr Valiashek, Myroslava Yavorska Investigation of the interaction of cracks with an inclusion in a perfectly elastic-plastic body using methods of computer algebra
4	10:30-10:40	Oleksandr Krasnokutskyi, Igor Cherevko, Inessa Krasnokutska Practical methods for numerical simulations of stability for systems with delay
5	10:40-10:50	Andrii Voloshchuk, Halyna Osukhivska, Maksym Drogobyskiy, Ivan Borodii, Igor Andrushchak Impact of Data Volume on Compression Algorithm Efficiency in Time Series Database Management Systems
6	10:50-11:00	Oleh Zaiats, Dmytro Mykhalyk, Vasyl Yatsyshyn, Oleh Pastukh, Liubov Tsymbaliuk Building Software Functional Architecture by Consensus Clustering of Requirements with Soft Inter-Component Links
7	11:00-11:10	Bogdan Pryymak, Mykola Zhelinskiy, Petro Vasyleha, Isabel Garzon Design and comparative analysis of a fuzzy control system for an electromechanical object
8	11:10-11:20	Ihor Kosovych, Yevhen Kostiuk, Igor Cherevko, Mariia Zaiets Temporal Analysis of Ukrainian Parliamentary Discourse Using Topic Modelingill
9	11:20-11:30	Mykhaylo Petryk, Oleksiy Tsebriy, Yurii Stoianov, Oksana Petryk, Halyna Tsupryk Application of Large Language Models for Generating Technical Proposals and Estimating IT Projects
10	11:30-11:40	Sergiy Tytenko, Serhii Artymovych, Vladyslav Saniuk, Ivan Feofanov KnowledgeMaps AI: Architecture and Implementation of an LLM-Based Concept Map Platform
	11:40-12:00 (20)	Coffee brakes
11	12:00-12:10	Volodymyr Sokolov, Pavlo Skladanniy Method for automating the process of verifying established medical diagnoses
12	12:10-12:20	Vasyl Trysnyuk, Kyrylo Smetanin, Serhii Zhuravsky, Taras Trysnyuk Models and Algorithm for Adaptive Electronic Jamming of FPV Drone Communication Links Based on Automatic Signal Identification
13	12:20-12:30	Illia Ignatyev, Vladyslav Khaidurov Mathematical support of information and measurement technology for controlling the power distribution process in electrical networks, taking into account environmental limitations
14	12:30-12:40	Dmytro Karpenko, Oleg Dekusha, Artur Zaporozhets Valentyn Tsapenko

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		Information Technologies for Criticality-Tiered Load Management in Hybrid Storage Systems
15	12:40-12:50	Olga Solovei Schema Evolution method for Databricks Telemetry Pipelines in Urban Construction Projects
16	12:50-13:00	Bohdan Solovei, Oleksandr Terentyev Digital Twin-enabled method for predictive stability assessment of a monorail crane

October 21		
	10:00-10:30	Workshop 1 summary. Final session Conference summary. Discussion of the presented papers.

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Workshop 2

Cybersecurity in the Era of AI

<https://tube5.tntu.edu.ua/rooms/kms-fnf-jti-5a1/join>

October 20		
	9:50-10:00 (10)	Conference opening.
1	10:00-10:10	Vasyl Ustimenko Oleksandr Pustovit Tymofii Svyrydenko On Artificial Intelligence and stream ciphers defined in terms of Algebraic Graph Theory
2	10:10-10:20	Roman Butsii, Ali Tawfiq Khwaldeh Low-Complexity ECG and PPG Authentication for IoT-Enabled Edge Sensor Systems
3	10:20-10:30	Viacheslav Kovtun, Oksana Kovtun, Oleksii Kozachko, Ilona Bogach, Oleh Yasniy Adaptive Resource-Aware Alert Routing with Statistical Guarantees for Security Operations Centres
4	10:30-10:40	Mykola Stetsiuk, Yurii Stetsiuk, Serhii Mostovyi, Volodymyr Dmytriv, Pawel Sawicki A Context-Dependent Method for Anomaly Detection in IoT Networks Using a Sector-Ring Model and Markov Forecasting
5	10:40-10:50	Ruslan Zharovskiy, Yurii Leshchyshyn, Andrii Manko, Andriy Palamar, Iurii Kriachko Acoustic Detection of Unmanned Aerial Vehicles Using Mel-Spectrograms and YOLOv8n-cls
6	10:50-11:00	Nina Bąkowska, Michał Wierzbicki, Krzysztof Zatwarnicki Semantic Contract Violation as an Escalation Signal for LLM Agents
7	11:00-11.10	Nataliia Petliak, Yurii Klots, Vira Titova, Dmytro Tymoshchuk Detection of abnormal behavior of operating system users
8	11:10-11:20	Olga Torstensson, Dmytro Prokopovych-Tkachenko A Reproducible SOC Malware-Investigation Exercise for Cybersecurity Education in the Era of AI
9	11:20-11:30	Ivan Opirskyy, Larysa Rakobovchuk, Ivan Tyshyk, Taras Nakonechnyy Detecting prompt injection attacks across datasets using lexical, semantic, and transformer-based models
10	11:30-11:40	Oleh Deineka, Oleh Harasymchuk, Yevhen Martseniuk, Andrii Partyka Pilot Implementation and Empirical Evaluation of an Azure-Based Data Classification Methodology for SOC 2 Type 2 Compliance
	11:40-12:00 (20)	Coffee brakes
11	12:00-12:10	Ivan Opirskyy Measuring misclassification of human-written text as AI-generated across detection architectures for content-authenticity security controls
12	12:10-12:20	Volodymyr Sokolov, Yuliia Kostyuk, Pavlo Skladannyi, Karyna Khorolska, Dmytro Hnatchenko AI-driven adaptive cryptographic protection for telecom-munication networks using LSTM and fuzzy logic

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13	12:20-12:30	Maria Stadnyk, Taras Lechachenko, Nataliia Petliak, Mykola Stetsiuk, Vasyl Vasykiv Comparative Analysis of Machine Learning Models for Malware Family Classification
14	12:30-12:40	Vasyl Yatskiv, Serhii Kulyna, Nataliia Yatskiv System Policy and Tool Controls against Ukrainian-Language Attacks on Quantized Edge LLM
15	12:40-12:50	Serhii Mostovyi, Oleh Savenko, Olena Pyrch, Volodymyr Dmytriv, Abdel-Badeeh M. Salem Intelligent Detection of Malicious Resource Behavior of Processes in Computer Systems
16	12:50-13:00	Nataliia Zagorodna ,Oleh Yarema LLM Driven Capacity Enhancement for SVG Steganography
17	13:00-13:10	Andriy Lutskiv, Yurii Balandiuk Failure Modes and Guardrails for LLM-Agent Elastic Scaling of IoT Stream Processing
18	13:10-13:20	Orest Polotai, Bohdana Polotai, Oleh Harasymchuk, Natalia Kukharska Artur Tkachenko Artificial Intelligence as a Dual-Purpose Technology in Cybersecurity: Generation, Obfuscation, and Detection of Cyber Threats in the Hotel Industry
19	13:20-13:30	Ivan Tyshyk, Andrii Partyka ,Sviatoslav Vasylyshyn Cyber Threat Detection Based on Integrated Analysis of Information Security Events Using Artificial Intelligence
20	13:30-13:40	Yuliia Kostyuk, Pavlo Skladanniy, Yuliia Samoilenko, Volodymyr Sokolov, Maksym Vorokhob An intelligent method for context-aware network traffic analysis for adaptive cyber defense of computer networks

October 21		
	10:00-10:30	Workshop 2. Final session Conference summary. Discussion of the presented papers.

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Workshop 3

Human Centric Artificial Intelligence in Medicine

WORKSHOP 3 <https://tube5.tntu.edu.ua/rooms/pgg-ogx-pfg-cmr/join>

October 20		
	9:50-10:00 (10)	Conference opening.
1	10:00-10:10	Tetiana Hovorushchenko, Yurii Voichur, Maksym Pytlyak, Roman Roiuk and Artem Boyarchuk Sleep quality monitoring cyber-physical system
2	10:10-10:20	Boryslav Selskyi, Andriy Sverstiuk, Petro Selskyy, Sviatoslav Kostiv, Igor Venher Identification of predictive factors for complications following endovascular interventions through analysis of clinical, anamnestic, and laboratory-instrumental data using information techniques
3	10:20-10:30	Hanin Gharamti, Jad Bazzi, Bassam Daya, Amine Bohi, Madeleine El Zaher Toward Interpretable Multimodal Stress Detection Using Facial Geometry and Emotional Valence
4	10:30-10:40	Oleksandr Povstianoi, Olena Vynokurova, Viktor Denysiuk, Yurii Lapchenko, Oleksandr Resehetylo Intelligent information technology for automated diagnostics of ocular fundus pathologies based on the analysis of digital color images and machine learning methods
5	10:40-10:50	Roman Tkachuk, Evhenia Yavorska, Anton Karnov Adaptive Biomedical Information Technology for Automated Ocular Hemodynamic Assessment
6	10:50-11:00	Vasyl Melnyk, Natalia Skutar, Halyna Melnyk Human-Centered Explainable Machine Learning for Coffee-Related Health Risk Prediction
7	11:00-11.10	Anatoliy Lupenko, Serhii Lupenko, Vasyl Kokhan Human-Centric Neuro-Symbolic AI Orchestration for Cardiovascular Data Processing
8	11:10-11:20	Andriy Palamar, Ruslan Zharovskyi, Andriy Lutskiv, Ievgeniia Tysh, Nadiia Lutsyk Multilayer Edge AI Architecture for Biomedical Monitoring Using Internet of Medical Things
9	11:20-11:30	Liliia Babinets, Nataliia Botsyuk, Iryna Halabitska, Nadiia Gashchyn, Oksana Sitkar Information technology for decision support regarding differentiated treatment of pancreatitis and type 2 diabetes based on ROC analysis and logistic regression
10	11:30-11:40	Dmytro Hasilin, Ihor Zhuravel, Yurii Zhuravel, Oleh Harasymchuk, Lesia Moroz NeRF Model Weight Watermarking: Impact on Downstream AI Data Pipelines
	11:40-12:00 (20)	Coffee brakes

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11	12:00-12:10	Yevhen Darnapuk, Polina Kravchenko, Olga Yaremchuk Biomedical Signal Processing on Arduino UNO Q: Evaluating MCU, MPU, and Heterogeneous Execution
12	12:10-12:20	Sergii Pavlov, Dmytro Romanenko, Oleksandr Poplavskyi, Tetiana Piliavoz Multi-Objective Optimization of Serverless Configuration using Genetic Algorithms
13	12:20-12:30	Oleksandr Volosovych, Sergii Pavlov, Oleksandr Poplavskyi, Valentyn Maslovskyi, Iryna Mezhiievska Intelligent System for Automated Pathology Detection in Coronary Angiographic Image Processing
14	12:30-12:40	Nataliia Kravets, Inna Grod, Lubov Shevchyk, Lidiya Romanyuk, Sergii Klymnyuk The correlation analysis between palatine tonsil microbiota and clinical features in acute tonsillitis using a bioinformatic pipeline

October 21		
	10:00-10:30	Workshop 3. 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,
Faculty of Computer Information Systems and Software Engineering
Opole University of Technology**

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