# BIOINFORMATICS AND APPLIED INFORMATION TECHNOLOGIES FOR MEDICAL PURPOSE

**(BAITmp-2026)**

**The 3rd International Workshop**

**November 11-13, 2026**

**Ternopil-Vinnytsia, Ukraine**

https://bait.tntu.edu.ua/

# WORKSHOP PROGRAMME

**Organizers and Partners**

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

Vinnytsia National Technical University

Association of Science and Education of Ukraine

Kharkiv National University of Internal Affairs

**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**

Meeting ID: 373 432 5240

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Join instructions

https://us02web.zoom.us/meetings/3734325240/invitations?signature=AvByYNox3Ny-68rsbsjJATaFS01pHONGOL_lqdTGz9E

# 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 workshop continuation will be after the air alarms are over**

# BAITmp-2026 General Timetable

| November 11 | | |
|---|---|---|
| | 9:30-10:00 | **Registration of workshop participants** |
| | 10:00 | **Workshop opening** |
| | 10:00-10:10 | **Welcome speech of the workshop organizers** |
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| **1** | 10:10-10:20 | **AI and LLM for Dynamic Contextual Adaptation of Closed-Loop MI-BCI in Stroke Rehabilitation**<br>*Vasyl Martsenyuk, Pavlo Tymkiv, Vitaliy Petrov, Oksana Bahrii-Zaiats, Igor Andrushchak* |
| **2** | 10:20-10:30 | **Quantitative Evaluation of XAI Explanations for Knee Osteoarthritis Severity Grading**<br>*Kateryna Bilyk, Oleh Basystiuk* |
| **3** | 10:30-10:40 | **Mathematical Modeling and Software Simulation of Non-Stationary Electron Transport in Multilayer Semiconductor Nanostructures for Quantum Cascade Laser Design**<br>*Viktoriia Hykava, Igor Boyko, Yulia Seti* |
| **4** | 10:40-10:50 | **Risk-Weighted Test Selection under a Time Budget**<br>*Ihor Liakh, Yurii Kish, Ruslana Zhovtani, Artemii Tsipino, Viktor Shakotko* |
| **5** | 10:50-11:00 | **FHIR Data Transformation for Medical Analytics: Information Preservation, Analytical Fidelity, and Performance**<br>*Ihor Cherevko, Halyna Melnyk, Vasyl Melnyk, Tetiana Hotynchan, Andriy Pertsov* |
| **6** | 11:00-11:10 | **Closed-Loop Telerehabilitation System with a Nature-Video Module Based on Arterial Oscillography**<br>*Dmytro Vakulenko, Olena Hevko, Liudmyla Vakulenko, Vasyl Dozorskyi, Ivan Smachylo* |
| **7** | 11:10-11:20 | **Auditing Chest X-ray Explanations through Evidence-Typed Transition Matrices**<br>*Pavlo Radiuk, Oleksander Barmak, Iurii Krak* |
| **8** | 11:20-11:30 | **Confound-Controlled Neural Network Autism Screening from Children's Facial Photographs**<br>*Maryna Molchanova, Olha Zalutska, Olexander Mazurets, Olexander Barmak, Iurii Krak* |
| **9** | 11:30-11:40 | **Hybrid Brain Tumor MRI Classification with a CNN and Radiomic Rule Network**<br>*Olexander Kyrychenko, Eduard Manziuk, Olexander Mazurets, Maryna Molchanova, Olha Zalutska* |

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|---|---|---|
| **10** | 11:40-11:50 | **Few-Shot Personalization of Cuffless Blood Pressure Estimation Models Using Multimodal Calibration Measurements**<br>*Vitaliy Mosiychuk, Oleg Sharpan* |
| | **11:50-12:30** | **Coffee break** |
| **11** | 12:30-12:40 | **Method for Quantitative Ocular Hemodynamic Assessment Based on Informative Parameters of Ocular Rheogram Signals**<br>*Bohdan Yavorskyy, Evhenia Yavorska, Oksana Dozorska, Halyna Tsupryk, Oleg Zastavnyy* |
| **12** | 12:40-12:50 | **An Effective Method to Reduce Distortion in MVDR Beamformer for Medical Purpose**<br>*Pham Van Ha, Nguyen Thi Huyen Chau, Quan Trong The* |
| **13** | 12:50-13:00 | **A New Approach for Increasing GSC Beamformer's Performance under Complicated Environment**<br>*Pham Van Ha, Nguyen Thi Huyen Chau, Quan Trong The* |

**TIME FOR PRESENTATIONS:**
**- paper presentation at the regular session – 5 min.**
**- discussion, questions – 5 min.**

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| November 12 | | |
|---|---|---|
| | 9:30-10:00 | **Registration of workshop participants** |
| | 10:00-10:10 | **Workshop opening** |
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| **1** | 10:10-10:20 | **Feature-Efficient Coronary Artery Disease Classification Using Incomplete Holter ECG Reports**<br>*Sergii Pavlov, Oleksandr Poplavskyi, Oleksandr Volosovych, Yuliia Pylypets, Aliya Imanbekova* |
| **2** | 10:20-10:30 | **Method and Algorithm for Correlation-Based Detection of Tremor Activity in Electromyographic Signals**<br>*Mykola Khvostivskyi, Liliia Khvostivska, Iryna Dediv, Vasyl Yatskiv, Olexandr Khvostivskyi* |
| **3** | 10:30-10:40 | **Mathematical Modeling and Optimization of a Multimodal Optical System for Non-Invasive Assessment of Diabetes-Related Changes**<br>*Oleksandr Kornilenko, Oleksandr Poplavskyi, Aliya Zilgarayeva, Maiia Kovalchuk* |
| **4** | 10:40-10:50 | **Dependency-Aware Backup Power Allocation for Digital Continuity in Small Medical Offices**<br>*Grigorii Shymchuk, Denys Kibitkin, Oleksandr Holotenko, Iaroslav Lytvynenko, Bogdan Palasyuk* |
| **5** | 10:50-11:00 | **Deep Learning Identification and Quantitative Assessment of Visual Lesion Signs on Human Skin**<br>*Zhengbing Hu, Dmytro Uhryn, Yurii Ushenko, Oleh Breslavskyi* |
| **6** | 11:00-11:10 | **Interactive Digital Simulation of Emergency Conditions as a Tool for Developing Clinical Reasoning an Medical Students**<br>*Vitaliy Klivak, Viktor Revenok, Victoria Rodinkova, Pavlo Tymkiv, Andriy Sverstiuk* |
| **7** | 11:10-11:20 | **Evolution of Deep Learning Architectures for Semantic Analysis of Medical Texts**<br>*Viktor Ralenko, Yevhen Davydenko, Igor Andrushchak, Oleksandra Kuchvara, Zhanna Antiuk* |
| **8** | 11:20-11:30 | **Explainable Machine Learning for Breast Cancer Classification: Comparative Evaluation and Threshold Analysis**<br>*Ihor Liakh, Bohdan Durnyak, Oleksandr Levchuk, Iryna Gado, Yaroslav Chukhrai* |
| **9** | 11:30-11:40 | **Filtering Impulse Noise in Digital Images Using MLMVN as an Impulse Detector**<br>*Igor Aizenberg, Andrii Bryla, Myroslava Hlebena, Yurii Tovt* |

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| **10** | 11:40-11:50 | **Positional Reference Bias in Evaluating Unsupervised Extractive Summarization of Medical Transcriptions**<br>*Dmytro Lavreniuk, Halyna Melnyk, Vasyl Melnyk, Tetiana Hotynchan, Oleksandr Matvii* |
| | **11:50-12:30** | **Coffee break** |
| **11** | 12:30-12:40 | **Synthesis of an Optimal Neural Network Structure for a Medical Hexapod Positioning Device**<br>*Mykhaylo Palamar, Bohdan Bilous, Andriy Palamar, Mykola Frankiv* |
| **12** | 12:40-12:50 | **Interpretable Logistic Regression for Glioma Classification with Selection of a Minimal Practically Equivalent Feature Set**<br>*Dmytro Tymoshchuk, Yuri Palianytsia, Andriy Sverstiuk, Yurii Hrytsiuk, Yurii Klots* |
| **13** | 12:50-13:00 | **Information Technology and Object-Oriented Software for the Analysis of the Impact of Cortical Neuronodes on Patient Hand Tremor Characteristics**<br>*Mykhaylo Petryk, Mykhaylo Bachynsky, Ivan Mudryk* |

| **November 13** | | |
|---|---|---|
| **1** | 9:00-10:00 | **Registration of workshop participants** |
| **2** | 10:00-12:00 | **Time for unpresented papers** |
| **3** | 12:00-12:30 | **Final session** |

**TIME FOR PRESENTATIONS:**
**- paper presentation at the regular session – 5 min.**
**- discussion, questions – 5 min.**

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