October 02-04, 2024
Zboriv, Ukraine
https://bait.tntu.edu.ua/

BIOINFORMATICS AND APPLIED INFORMATION TECHNOLOGIES

(BAIT-2024)

The 1st International Workshop

WORKSHOP PROGRAMME

Organizers and Partners

Zboriv Professional College
of Ternopil Ivan Puluj
National Technical University

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

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?pwd=UENyUlE3bnBsdHFHanFHY1FrbnZlUT09

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

October 02-04, 2024, Zboriv, Ukraine

BAIT-2024 General Timetable

	October 02	
	9:45-10:15	**Registration of workshop participants**
	10:15	**Workshop opening**
	10:15-10:20	**Welcome speech of the workshop organizers**
1	10:20-10:30	*Victoria Vysotska, Vasyl Lytvyn, Serhii Vladov, Oleksandr Muzychuk and Oleksii Kryshan* **The controller synthesis automation using a dynamic mathematical model and genetic algorithms**
2	10:30-10:40	*Mykhaylo Petryk, Oleksiy Tsebriy, Yurii Stoianov, Oksana Petryk and Oleh Pastukh* **A system for monitoring self-tests for COVID-19 using neural convolutional deep networks**
3	10:40-10:50	*Taras Dubyniak, Aleksandra Kłos-Witkowska, Oleksandra Manziy, Stanislav Andreychuk and Tetiana Kukharchuk* **Creating a web application for analyzing the investment attractiveness of medical drugs**
4	10:50-11:00	*Olha Mykhaylova, Andriy Shtypka and Taras Fedynyshyn* **An Isolation Forest - based approach for brute force attack detection**
5	11:00-11:10	*Volodymyr Semchyshyn and Dmytro Mykhalyk* **IOT-based electrocardiogram monitoring system as an element of access to better medical services**
6	11:10-11:20	*Oleksandr Bryk, Ivan Mudryk, Mykhailo Holubovskyi and Yurii Stoianov* **Machine learning models and methods aspects of processing unstructured data**
7	11:20-11:30	*Andrii Sverstiuk, Lyubomyr Matiichuk, Uliana Polyvana, Andrii Stanko and Vyacheslav Nykytyuk* **Analytical analysis of approaches to assessing the quality of life in smart cities**
8	11:30-11:40	*Andrii Stanko, Oleksii Duda, Andrii Mykytyshyn, Oleg Totosko and Rostyslav Koroliuk* **Artificial Intelligence of Things (AIoT): Integration Challenges, and Security Issues**
9	11:40-11:50	*Andrii Sverstiuk, Taras Dubyniak, Volodymyr Nevozhai, Andrii Remez and Mykola Poshyvak* **Determination of heterogeneity of composite materials of shell structures by conductometric method**
10	11:50-12:00	*Vadim Romanuke, Sergii Pavlov, Svitlana Yaremko, Artem Guralnyk and Olena Smetaniuk* **DBSCAN parallelization by spatial dataset division and hyperparameter adjustment**

	12:00-12:30	Coffee break
11	12:30-12:40	*Rostyslav Koroliuk, Vyacheslav Nykytyuk, Vitaliy Tymoshchuk, Veronika Soyka and Dmytro Tymoshchuk* **Automated monitoring of bee colony movement in the hive during winter season**
12	12:40-12:50	*Petro Stukhliak, Oleg Totosko, Olena Vynokurova and Danulo Stukhlyak* **Investigation of tribotechnical characteristics of epoxy composites using neural networks**
13	12:50-13:00	*Volodymyr Iasnii, Andrii Sorochak, Liliya Melnyk and Taras Hural* **3D laser scanning of the structure during reconstruction based on BIM technology**
14	13:00-13:10	*Volodymyr Stefanyshyn, Ivan Stefanyshyn, Oleh Pastukh, Vasyl Yatsyshyn and Ihor Yakymenko* **Accuracy of software and hardware of computer systems for human-machine interaction**
15	13:10-13:20	*Dmytro Tymoshchuk, Oleh Yasniy, Mykola Mytnyk, Nataliya Zagorodna and Vitaliy Tymoshchuk* **Detection and classification of DDoS flooding attacks by machine learning methods**

October 03		
	10:45-11:00	**Registration of workshop participants**
1	11:00-11:10	*Mykola Khvostivskyi, Liliia Khvostivska, Iryna Dediv, Ihor Yavorskyi and Serhii Uniiat* **Medical Computer System for Diagnosing the State of Human Vessels**
2	11:10-11:20	*Pavlo Tymkiv, Aleksandra Kłos-Witkowska, Oksana Bahrii-Zaiats, Serhii Kovalyk* **Smart Prosthetics in Surgery: AI-Driven Tactile Feedback Using Piezoelectric Sensors**
3	11:20-11:30	*Valerii Hraniak, Olexandr Romanyuk, Bohdan Tishkov and Valentyn Rohach* **Intelligent system for diagnosing rotating electric machines**
4	11:30-11:40	*Oleh Yasniy, Abdellah Menou, Andriy Mykytyshyn, Vitalii Kubashok and Iryna Didych* **Application of neural network platforms for text-based image generation**
5	11:40-11-50	*Iryna Strutynska, Halyna Kozbur, Olena Sorokivska, Lesia Dmytrotsa and Ihor Kozbur* **Analysis of Business Structures Regarding the Level of Digital Maturity Using Data Mining Methods**

6	11:50-12:00	*Volodymyr Voloskyi, Yurii Leshchyshyn, Nestor Romanyshyn, Andriy Palamar and Lev Tarasenko* **Method and algorithm for efficient cell balancing in the lithium-ion battery control system**
	12:00-12:30	**Coffee break**
7	12:30-12:40	*Vasil Dozorskyi, Vasyl Martsenyuk, Oksana Dozorska, Leonid Dediv and Nataliya Klymuk* **The concept of developing the structure of a highly functional bionic hand prosthesis based on IoT technologies**
8	12:40-12:50	*Olena Hordiichuk-Bublivska, Halyna Beshley, Iryna Ivanochko, Mykola Beshley and Orest Kochan* **Modified Funk SVD-Augmented Recommender Systems for Advancing Visual Data Processing in Industrial IoT**
9	12:50-13:00	*Caixiao Ouyang, Hu Jiwei, Youyuan She and Chunzhi Wang* **Attention Enhancement of YOLO for Vehicle Detection**
10	13:00-13:10	*Yanlie Zheng, Hu Jiwei, Xueying Li, Qingxia Shen and Chunzhi Wang* **Traffic flow prediction model based on multi-scale pyramid space-time network**

October 04	
10:45-11:00	**Final session**

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1	10:20-10:30	*Victoria Vysotska, Vasyl Lytvyn, Serhii Vladov, Oleksandr Muzychuk and Oleksii Kryshan* **The controller synthesis automation using a dynamic mathematical model and genetic algorithms**	**https://youtu.be/YW8D4ZyYvC8**
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3	10:40-10:50	*Taras Dubyniak, Aleksandra Kłos-Witkowska, Oleksandra Manziy, Stanislav Andreychuk and Tetiana Kukharchuk* **Creating a web application for analyzing the investment attractiveness of medical drugs**	**https://youtu.be/KVqZskl8Yj0**
4	10:50-11:00	*Olha Mykhaylova, Andriy Shtypka and Taras Fedynyshyn* **An Isolation Forest - based approach for brute force attack detection**	**https://youtu.be/ypONmHz2WCA**
5	11:00-11:10	*Volodymyr Semchyshyn and Dmytro Mykhalyk* **IOT-based electrocardiogram monitoring system as an element of access to better medical services**	**https://youtu.be/PWFMoXjsSk0**
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7	11:20-11:30	*Andrii Sverstiuk, Lyubomyr Matiichuk, Uliana Polyvana, Andrii Stanko and Vyacheslav Nykytyuk* **Analytical analysis of approaches to assessing the quality of life in smart cities**	**https://youtu.be/NXkR4g92Cq0**
8	11:30-11:40	*Andrii Stanko, Oleksii Duda, Andrii Mykytyshyn, Oleg Totosko and Rostyslav Koroliuk* **Artificial Intelligence of Things (AIoT): Integration Challenges, and Security Issues**	**https://youtu.be/zJAh8aDPLtI**
9	11:40-11:50	*Andrii Sverstiuk, Taras Dubyniak, Volodymyr Nevozhai, Andrii Remez and Mykola Poshyvak* **Determination of heterogeneity of composite materials of shell structures by conductometric method**	**https://youtu.be/SblsYiMQdLI**
10	11:50-12:00	*Vadim Romanuke, Sergii Pavlov, Svitlana*	**https://youtu.be/5b4KuPDxZjo**

		Yaremko, Artem Guralnyk and Olena Smetaniuk **DBSCAN parallelization by spatial dataset division and hyperparameter adjustment**	
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15	13:10-13:20	*Dmytro Tymoshchuk, Oleh Yasniy, Mykola Mytnyk, Nataliya Zagorodna and Vitaliy Tymoshchuk* **Detection and classification of DDoS flooding attacks by machine learning methods**	**https://youtu.be/Yc2iyEiW6m4**

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2	11:10-11:20	*Pavlo Tymkiv, Aleksandra Kłos-Witkowska, Oksana Bahrii-Zaiats, Serhii Kovalyk* **Smart Prosthetics in Surgery: AI-Driven Tactile Feedback Using Piezoelectric Sensors**	**https://youtu.be/S46A9YGGs-Y**
3	11:20-11:30	*Valerii Hraniak, Olexandr Romanyuk, Bohdan Tishkov and Valentyn Rohach* **Intelligent system for diagnosing rotating electric machines**	**https://youtu.be/sEO3FfgQhh8**
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		Systems for Advancing Visual Data Processing in Industrial IoT	
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October 04
(Final session)

YouTube: https://youtu.be/RCvSTf6lf8o

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TIME FOR PRESENTATIONS

Paper presentation at the regular session – 5 min.

Discussion, questions – 5 min.

Organized by:

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