



COMPUTER SCIENCE AND INFORMATION TECHNOLOGIES

22-25 September, 2021
Lviv, Ukraine
<http://csit.ieee.org.ua/>

XVIth International Scientific and Technical Conference

CONFERENCE PROGRAMME



*Advancing Technology
for Humanity*

IEEE Ukraine Section

IEEE West Ukraine

AP/ED/MTT/CPMT/SSC Societies

Joint Chapter



Ministry of
Education and
Science of Ukraine



National Academy of Sciences of
Ukraine



Lviv Polytechnic
National University



Institute of Computer Science
and Information Technologies



Politechnika Łódzka



Kharkiv National
University of Radio Electronics



CSIT 2021 General Timetable

September 22	
9.45–10.00	Conference opening
10.00–12.00	Plenary session CSIT + IWIM+ IWPM+IWIMDKKE
12.10–13.50	International workshop on Inductive modeling
September 23	
10.00–17.00	International workshop on Project Management
10.00–11.00	Information Computer Technologies in Education Section (Session 1)
11.00–12.10	Cyber-physical systems Section (Session 2)
12.00–14.10	Intelligent management technologies Section (Session 3)
14.00–17.20	Artificial intelligence Section (Session 4)
10.00–12.00	Mathematical modeling in computer sciences Section (Session 5.1)
September 24	
10.00–12.00	International Workshop on Information Modeling. Data and Knowledge Engineering
14.00–16.00	Mathematical modeling in computer sciences Section (Session 5.2)
10.00–13.30	Software engineering Section (Session 6)
14.00–17.20	Applied linguistics Section (Session 7)
14.00–16.20	Big data and Data sciences Section (Session 8)
September 25	
10.00	Final session

TIME FOR PRESENTATIONS

Paper presentation at the plenary session – 30 min.

Paper presentation at the regular session – 5 min.

Discussion, questions – 5 min.



Organized by:

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Ministry of Education and Science of Ukraine

National Academy of Sciences of Ukraine

Lviv Polytechnic National University

Technical University of Lodz, Lodz, Poland

International research and training center for information technologies and systems
of the National Academy of Sciences of Ukraine and of Ministry of Education and Science of Ukraine
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

Lviv, UKRAINE

22–25 September 2021

September 22

10:00 – 12:00

Plenary session

Chairman: Prof. Yuriy Bobalo, Prof. Mykola Medykovskyy

Secretary: Tetiana Shestakevych



10:00 – 10:30

***Yevgeniy
Bodyanskiy,
Ukraine***



10:30 – 11:00

***Tetiana
Hovorushchenko,
Ukraine***



11:00 – 11:30

***Thierry
Edoh,
Germany***



11:30 – 12:00

***Sergey
Bushuyev,
Ukraine***

September 22

12:10 – 13:50

International workshop on Inductive modeling

Chairman: Prof. Volodymyr Stepashko

12.10 – 12.20	Anna Boldyreva, Mikhail Alexandrov, Bulat Bayburin, Olexiy Koshulko, Pavel Mogilev: Search Queries to Internet as a Tool for Mid-term Forecast of Cryptocurrencies (XRP, Waves, ETH) on GMDH-based models
12.20 – 12.30	Oleksandr Davydko, Yaroslav Hladkyi, Mykola Linnik, Olena Nosovets, Vladimir Pavlov, Ievgen Nastenکو: Hybrid Classifiers Based on CNN, LSOF, GMDH in COVID-19 Pneumonic Lesions Types Classification Task
12.30 – 12.40	Dmytro Hrishko, Oleksandr Trofymenko, Katerina Bovsunoskaja, Olena Nosovets, Irina Dykan, Borys Tarasiuk, Vladimir Pavlov, Ievgen Nastenکو: Optimal Complexity Structures of Ultrasound Image Models in Diagnostic Decision Making System
12.40 – 12.50	Oleksandr Matviichuk, Olena Nosovets, Mykola Linnik, Oleksandr Davydko, Vladimir Pavlov, Ievgen Nastenکو: Class-Oriented Features Selection Technology in Medical Images Classification Problem on the Example of Distinguishing Between Tuberculosis Sensitive and Resistant Form
12.50 – 13.00	Olha Moroz: Analysis of MIA GMDH as a self-organizing deep neural network
13.00 – 13.10	Volodymyr Osypenko, Valentyna Osypenko: Application of Inductive Modeling Principles to Solve the Double Clustering Problems
13.10 – 13.20	Yevgeniya Savchenko-Synyakova, Ihor Surovtsev, Volodymyr Stepashko, Olena Tokova: Comparison of Data Noise Filtration Methods for Casting Cooling Curves
13.20 – 13.30	Bulat Shkanov, Anna Zolotova, Mikhail Alexandrov, Olexiy Koshulko: Express Diagnosis of COVID-19 on Cough Audiograms with Machine Learning Algorithms from Scikit-learn library and GMDH Shell tool
13.30 – 13.40	Elena Shushkevich, Mikhail Alexandrov, John Cardiff: Detecting fake news about Covid-19 using classifiers from Scikit-learn
13.40 – 13.50	Olena Tutova, Yevgeniya Savchenko-Synyakova, Halyna Pidnebesna: Modelling of the Impact of Socio-Demographic Indicators on the Gross National Income by CORAL GMDH

September 23

10:00 – 17:10

International workshop on Project management

Chairman: Prof. Nataliia Kunanets, Prof Sergey Bushuyev

10.00 – 10.10	Igor Kondysiuk, Anatoliy Tryhuba, Oleg Bashynsky, Vitalij Grabovets, Valerii Dembitskyi and Iryna Myskovets. Features of formation and risks of values of stakeholders of motor transport enterprises integrated projects
10.10 – 10.20	Anatoliy Tryhuba, Vitaliy Boyarchuk, Nazar Koval, Inna Tryhuba, Oksana Boiarchuk and Nataliia Pavlikha. Risk-adapted model of the lifecycle of the technologically integrated programs of dairy cattle breeding
10.20 – 10.30	Sergey Rudenko, Anatoliy Shakhov, Varvara Piterska, Lyudmila Chernova and Olha Sherstiuk. Application of balanced scorecard for managing university development projects
10.30 – 10.40	Serhii Chernov, Serhii Titov, Liudmyla Chernova, Varvara Piterska, Liubava Chernova and Nataliia Kunanets. Three-Index Optimization Transportation Model
10.40 – 10.50	Anatoliy Shakhov and Oleksandr Kupraty. Basic project of autonomous main engine control and its implementation in C# (C sharp) environment
10.50 – 11.00	Hanna Pryshchepa and Nataliia Kunanets. Modern IT problems and ways to solve them
11.00 – 11.10	Sergey Bushuyev, Natalia Bushuyeva, Denis Bushuiev and Victoria Bushuieva. Conceptual model of project digital footprint
11.10 – 11.20	Sergiy Rudenko, Tetiana Kovtun, Tetiana Smokova and Dmitry Kovtun. Multidimensional organizational structures of eco-logistic project management
11.20 – 11.30	Oleksandr Voitenko, Lyudmila Chernova, Liubava Chernova and Alexander Timinsky. 4K-model as a basis of improving project management maturity in the organization
11.30 – 11.40	Sergey Bushuyev, Victoria Bushuieva, Svitlana Onyshchenko and Denis Bushuiev. Dynamics of the project digital footprint and its impact on the success of the project
11.40 – 11.50	Yaroslav Kis, Volodymyr Pasichnyk, Nataliia Kunanets, Nataliia Veretennikova and Stepan Lysa. Procedures for Data Analysis in the Information System of Electronic Sales of Vehicles
11.50 – 12.00	Sergey Bushuyev, Nataliya Gaydukova, Nataliya Bushuyeva and Igor Achkasov. Evaluation of the investment projects portfolio efficiency
12.00 – 12.10	Yuriy Turbal, Sergii Babych, Nataliia Kunanets, Leonid Melnyk and Volodymyr Pasichnyk. "Permanent" algorithm for the meeting schedule problem
12.10 – 12.20	Pavlo Lub, Sergiy Berezovetskyi, Roman Chubyk and Vadym Ptashnyk. The Research Of Technological Risk Of The Harvesting Projects On The Basis Of Simulation Modeling
12.20 – 12.30	Aynura Ismayilova and Vilayat Valiyev. Decision Making on the Selection of Factors Affecting to Increase of Non-Oil Export for Oil-Producing Countries
12.30 – 12.40	Sergey Bushuyev and Andrii Puziichuk. Development organizational structure for value-oriented reengineering project of construction enterprises
12.40 – 12.50	Galyna Fesenko, Tetiana Fesenko, Hryhorii Fesenko, Volodymyr Korzhenko and Tamila Bilousko. "Gender Diversity" as a constant in Sustainable Development Program Management
12.50 – 13.00	Maryna Kutsenko. Application of the project approach as part of the territory development strategy
13.00 – 13.10	Nataliia Yehorchenkova, Oleksii Yehorchenkov, Iurii Teslia, Iulia Khlevna and Oleg Grygor. Structure and functions of supporting subsystems in the management of project-oriented businesses of companies
13.10 – 13.20	Valentina Molokanova and Inna Hordieieva. Model and information technologies for adaptive management of organizations according to the criteria of efficiency and timeliness
13.20 – 13.30	Oleh Zachko, Oleh Kovalchuk, Dmytro Kobylkin and Valentyna Yashchuk. Information technologies of HR management in safety-oriented systems
13.30 – 13.40	Vasyl Fershtei, Valentyna Mudrokha, Nadiia Popadiuk and Galyna Melnyk-Khokha. Project-innovation activity in the Vasyl Stefanyk national scientific library of Ukraine in Lviv

13.40 – 13.50	Oleksandr Gryshchuk, Anatoliy Petryk, Arkadiy Kozlov, Olena Bura and Maryna Tyshkevych. Methodology of Design and Creation of Organizational and Technical Systems in Transport Nodes
13.50 – 14.00	Yan Peng, Iryna Davydova, Nataliia Kunanets and Nataliia Veretennikova. University Library Projects for the Formation of China's Digital Library and Information Space
14.00 – 14.50	<i>Coffee break</i>
14.50 – 15.00	Nestor Shpak, Liana Maznyk, Zoriana Dvulit, Kateryna Doroshkevych, Natalia Horbal and Svyatoslav Kis. Smart contract as a way to exchange digital values in Blockchain
15.00 – 15.10	Parviz Kazimi. Global Information Network and Conflicts of Interest (Parties, Interests, and Conflicts)
15.10 – 15.20	Nestor Shpak, Kateryna Doroshkevych, Roman Dzvonyk, Marta Naichuk-Khrushch, Zoriana Dvulit and Yuriy Shpak. Evaluation of Tactical Approaches to the Implementation of the Strategy of Innovative IT Projects
15.20 – 15.30	Oleh Veres, Pavlo Ilchuk and Olha Kots. Data Science Methods in Project Financing Involvement
15.30 – 15.40	Kateryna Kolesnikova, Olga Mezentseva, Oleksii Kolesnikov and Janet Danso Obenewaa. Using Agile Frameworks in Big Data projects
15.40 – 15.50	Yuriy Pankiv, Natalija Kunanets, Nataliia Veretennikova, Olga Artemenko and Ruslan Nebesnyi. Project of an Intelligent Recommender System for Parking Vehicles in Smart Cities
15.50 – 16.00	Nataliia Kunanets, Liudmyla Sokur, Viktoriia Dobrovolska and Sergii Lytvyn. Project Activities of Shevchenko National Preserve in Informational Society
16.00 – 16.10	Viktoriia Dobrovolska, Nataliia Kunanets, Sergii Lytvyn, Oksana Zbanatska and Oleksandr Kyrylenko. Basic principles of Ukrainian Record Studies web-portal creation
16.10 – 16.20	Ruslan Nebesnyi, Nataliia Kunanets, Nataliia Veretennikova and Roman Vaskiv. Formation of an IT Project Team in the Context of PMBOK Requirements
16.20 – 16.30	Liliana Dzhydzhora, Halyna Matsiuk, Oleksandr Matsiuk and Nataliia Kunanets. Using a smart city thesaurus to perform informational search in a narrow subject area
16.30 – 16.40	Tetiana Skliarova, Nataliia Kunanets and Sydir Kiral. Development and research of a consolidated information system on documentary sources of churches in Lemkivshchyna
16.40 – 16.50	Carsten Wolff, Sergey Bushuyev, Stephan Recker, Olena Verenych, Galyna Tabunshchik and Anna Badasian. International Educational Project: ELearning Results Assessment (Case Study)
16.50 – 17.00	Ivan Oberemok, Nataliia Oberemok and Natalia Bushuyeva. Homeostatic approach to the formation of an information product of an organization's management system
17.00 – 17.10	Evvgene Druzhinin, Valeriy Cheranovskiy and Sergii Stetsenko. Rational use of simulation methods while development of technically complex objects.

September 23

10:00 – 11:00

Information computer technologies in education

Session 1

Chairman: Prof. Dmytro Fedasyuk

10.00 – 10.10	Vira Liubchenko and Hlib Parkhomenko: The Involvement of Jupyter Notebooks as an Educational Tools: A Case Study
10.10 – 10.20	Olha Pohudina, Mykhailo Kovalevskyi and Mariia Pyvovar: Group flight automation using Tello EDU unmanned aerial vehicle
10.20 – 10.30	Aleksandr Stenin, Victor Pasko, Mariya Soldatova and Iryna Drozdovych: Infological approach to formation of the specialty curricular
10.30 – 10.40	Anastasiya Doroshenko and Serhii Hlod: Application of augmented reality technologies for education
10.40 – 10.50	Tatjana Selivyorstova and Vadim Selivyorstov: Game application for studying the technology of gas-dynamic impact on the melt in a casting mold
10.50 – 11.00	Olena Kovalenko, Yevgen Palamarchuk and Rymma Yatskovska: Assessing the level of maturity of the automated management system of a higher education institution

September 23

11:00 – 12:10

Cyber-physical systems

Session 2

Chairman: Prof. Mykhailo Lobur

11.00 – 11.10	Vyacheslav Tykhonov, Vladimir Kartashov, Vitaliy Pososhenko, Viktoriia Kolisnyk, Sergiy Sheiko, Andriy Yegorov and Mykola Rybnykov: Detection and Recognition of Unmanned Aerial Vehicles by the Spectrum of Their Acoustic Signals
11.10 – 11.20	Oleh Zubkov, Sergiy Sheiko, Vladimir Oleynikov and Vladimir Kartashov: Investigation of the neural networks effectiveness in recognizing moving drones
11.20 – 11.30	Serhii Shatnyi, Sergiy Kunitskyi, Vladlen Volkov and Anastasia Shatna: Information Technology of Data Processing and Analysis on Automated Measuring Complex of Water Systems Stability
11.30 – 11.40	Aleksandr Trunov, Pavlo Kazan, Volodymyr Aliksieiev, Olha Korolova, Oleksandr Sliusarenko and Ivanna Dronyuk: Functioning Model of The Ground Robotic Complex
11.40 – 11.50	Vasyl Sheketa, Mykola Pasiaka, Taras Serman, Nadiia Pasiaka, Svitlana Chupakhina and Larysa Krul: System Analysis and Example of Using SHA-512 Hash Functions to Protect Students' Personal Data on Educational Platforms
11.50 – 12.00	Svitlana Popereshnyak and Oleksii Raichev: The development and testing of lightweight pseudorandom number generators
12.00 – 12.10	Yevhen Aksonov, Volodymyr Kombarov, Yevgen Tsegelnyk, Sergiy Plankovskyy, Olena Fojtů and Lidiia Piddubna: Visualization and analysis of technological systems experimental operating results

September 23

12:00 – 14:10

Intelligent Management Technologies

Session 3

Chairman: Prof. Vasyl Teslyuk

12.00 – 12.10	Oleksandr Kuzmin, Sergii Kuzmin and Oles Korzhynskyy. Data Transmission Simulation Model in BLE-supported Systems for Highly Reliable Industrial IoT
12.10 – 12.20	Volodymyr Riznyk, Ivan Demydov, Mykola Medykovskyy, Vasyl Teslyuk and Mykhailo Solomko. Models of Intelligent Systems as the Toroidal Combinatorial Configurations
12.20 – 12.30	Vyacheslav Repeta, Olena Havrylyshyn and Ihor Myklushka. Modelling of the factors influence on the quality of the digitization process of old books by fuzzy logic
12.30 – 12.40	Yaroslav Paranchuk, Volodymyr Moroz, Volodymyr Tsyapa and Mykhailo Khai. Simulation of modes of by-phase electromechanical fuzzy control system of arc furnace arc lengths
12.40 – 12.50	Svitlana Bibik, Halyna Nesterenko, Mykhailo Muzykin and Albina Kuzmenko. Improvement of the automated control technology of trains traffic with dangerous goods
12.50 – 13.00	Misheel Enkhbaatar and Tatsuya Yamazaki. Development of an Automatic Visual Monitoring System for Data Center Devices
13.00 – 13.10	Sergii Kliuiev, Ievgen Medvediev, Evgeny Mikhailov, Stanislav Semenov and Vasyl Dubuk. Geo-information technologies in the rail transport intellectualization
13.10 – 13.20	Kateryna Obukhova, Tamara Savchuk, Iryna Zhuravska, Anzhela Boiko, Vitalii Nikolskyi and Sergii Puzyrov. Prevention of Unmanned Vessels Collisions due to Pre-modeling the Remote Control Center CPU Load
13.20 – 13.30	Nataliia Dotsenko, Dmytro Chumachenko and Igor Chumachenko. Formation of a project team using an intelligent logic-combinatorial approach
13.30 – 13.40	Andriy Krysovaty, Khrystyna Lipianina-Honcharenko, Svitlana Sachenko, Oksana Desyatnyuk, Iryna Lukasevych-Krutnyk and Natalia Butrin-Boka. Classification Method of Fictitious Enterprises Based on Gaussian Naive Bayes
13.40 – 13.50	Ahmet Burhan Soran, Roali Tarik Biten and Pinar Kirci. Designing a Smart Vacuum Cleaner
13.50 – 14.00	Rahime Kir, Atike Iscan and Pinar Kirci. A Mobile Application For The Visually Handicapped
14.00 – 14.10	Mariya Nazarkevych, Nataliia Lotoshynska, Volodymyr Hrytsyk, Bohdana Havrysh, Olha Vozna and Oleksandra Palamarchuk. Design of biometric system and modeling of machine learning for entering the information system

September 23

14:00 – 17:20

Artificial intelligence

Session 4

Chairman: Prof. Nataliya Shakhovska

14.00 – 14.10	Dmitriy Klyushin and Kateryna Golubeva. Novel nonparametric test for comparing machine learning models for COVID-19 outbreak prediction
14.10 – 14.20	Olha Chala, Yevgeniy Bodyanskiy, Anastasiya Deineko and Iryna Pliss. Fast Image Recognition Using Double Hyper Basis Function Neural Network and Its Combined Learning
14.20 – 14.30	Yuriy Zaychenko, Galib Hamidov and Helen Zaichenko. Investigation of recurrent networks LSTM in the problem of Covid-19 forecasting
14.30 – 14.40	Vladyslav Kotsovsky, Anatoliy Batyuk and Volodymyr Voityshyn. On the Size of Weights for Bithreshold Neurons and Networks
14.40 – 14.50	Adam Dąbrowski, Krzysztof Lichy, Piotr Lipiński and Barbara Morawska. Dog Breed Library with Picture-Based Search Using Neural Networks
14.50 – 15.00	Vladyslav Kotsovsky and Anatoliy Batyuk. Decision List-Based Representation of Bithreshold Functions
15.00 – 15.10	Taras Chaikivskyi, Valentyna Maliarenko, Bogdan Sus, Oleksandr Bauzha, Sergiy Zagorodnyuk and Viktor Reutsky. Development of Artificial Neural Networks for Cyclohexane Oxidation Data Analysis
15.10 – 15.20	Oleh Berezsky, Oleh Pitsun, Ihor Pazdriy, Grygoriy Melnyk and Yuriy Batko. Automatic Segmentation of Immunohistochemical Images Based on U-net Architecture
15.20 – 15.30	Anastasiya Doroshenko and Dmytro Savchuk. Investigation of machine learning classification methods effectiveness
15.30 – 15.40	Nataliya Boyko and Yaroslav Hladun. Histogram Filter for Robot Localization
15.40 – 15.50	Nataliya Boyko and Yaroslav Zhyhaylo. Comparison of Algorithms of Associative Rules Search Apriori and Fp-Growth for Investigation of Time Dependence of Their Execution on Database Parameters
15.50 – 16.00	Anastasiia Sartiukova, Roman Peleshchak, Ivan Peleshchak and Victoria Vysotska. The Multiclass Classification of Objects Based on Multispectral Images Recognition
16.00 – 16.10	Dmytro Chumachenko, Kseniia Bazilevych, Ievgen Meniailov, Dmytro Kolmogorov and Sergey Yakovlev. Forecasting of COVID-19 epidemic process by gradient boosting method in Ukraine and neighboring countries
16.10 – 16.20	Andrii Yarovy and Dmytro Kudriavtsev. Multi-purpose search to determine the context of a text message based on the dictionary data structure
16.20 – 16.30	Oleh Voloshynskyi, Victoria Vysotska and Myroslava Bublyk. Cardiovascular Disease Prediction Based on Machine Learning Technology
16.30 – 16.40	Oleksii Shatalov and Nataliya Ryabova. Named Entity Recognition Problem for Long Entities in English Texts
16.40 – 16.50	Anatoly Shevchenko and Alexander Sosnitsky. Critical Problems in the Synthesis of Artificial Intelligence
16.50 – 17.00	Andrii Biloshchytskyi, Alexander Kuchansky, Yuriy Andrashko, Aidon Mukhatayev, Sapar Toxanov and Adil Faizullin. The comparison of methods for assessing the productivity of scientific subjects
17.00 – 17.10	Andrii Biloshchytskyi, Serik Omirbayev, Aidon Mukhatayev, Adil Faizullin, Sapar Toxanov and Khanat Kassenov. Development of a subsystem of Mass Open Online Courses (MOOCs) as an element of the distance learning portal
17.10 – 17.20	Natalya Shakhovska and Andrii Natiahlyi. The System for Eliminating Blurring of Text Images Using Convolutional Neural Networks

September 23**10:00 – 12:00****Mathematical modeling in computer science****Session 5.1****Chairman: Prof. Liubov Zhuravchak**

10.00 – 10.10	Larysa Yaremchuk and Liliya Hogaboam. Application of Hierarchical Modeling in Wood Material Coloring Methods Selection
10.10 – 10.20	Svitlana Krepych, Iryna Spivak and Serhii Spivak. Parametric identification of static systems by methods of interval data analysis using parallel calculations
10.20 – 10.30	Svitlana Krepych, Iryna Spivak and Serhii Spivak. Model of functional suitability of the process of growing of fish planting material in recirculating aquaculture systems based on methods of interval data analysis
10.30 – 10.40	Elena Balalayeva, Olga Tuzenko, Volodymyr Kukhar, Yulianna Lazarevska and Nataliia Sidun. Computer Simulation of Metal Grain Recrystallization on the Basis of Data Analysis Methods
10.40 – 10.50	Roman Bazylevych and Lubov Bazylevych. A set of nets planarization with two chains of contacts
10.50 – 11.00	Yaroslav Pelekh, Roksolyana Stolyarchuk, Andrii Kunynets, Serhii Mentynskyi, Bohdan Pakholok and Bohdan Fil. Determination of Magnetic Field Strength in a Layer of Electrotechnical Steel
11.00 – 11.10	Olexandr Yemelyanov, Tetyana Petrushka, Lilia Lesyk, Anastasiya Symak and Olena Vovk. Data modelling for the assessment of sustainable energy-saving development of enterprises
11.10 – 11.20	Liubov Zhuravchak. Near-Boundary Element Method Modeling of Steady Oscillations of the Electromagnetic Fields in Piecewise-Homogeneous Objects
11.20 – 11.30	Liubov Zhuravchak and Nataliya Zabrodskya. Identification of Inhomogeneities According to Potential Field Data Using the Near-Boundary Element Method
11.30 – 11.40	Pavlo Kovalchuk, Viacheslav Stetsenko, Olena Demchuk, Volodymyr Kovalchuk and Hanna Balykhina. Modeling Extreme Management of Saline Water Dilution in the Ingulets River Basin
11.40 – 11.50	Mykhajlo Bartish, Olha Kovalchuk and Nataliya Ohorodnyk. General scheme for construction of three-step methods for minimization functions
11.50 – 12.00	Yaroslav Sokolovsky and Oleksiy Sinkevych. Study of Heat and Mass Transfer into Biomaterials by Using Asynchronous Cellular Automata

September 24

10:00 – 12:00

International Workshop on Information Modeling. Data and Knowledge Engineering

Chairman: Prof. Volodymyr Pasichnyk

10.00 – 10.10	Oleksii Duda, Nataliia Kunanets, Serhii Martsenko, Volodymyr Pasichnyk and Vyacheslav Nykytyuk. Information technology platform for the selection and analytical processing of information on COVID-19
10.10 – 10.20	Oleg Riznyk, Ivan Tsmots, Yurii Kynash and Olga Myaus. Methods for Increasing the Power of Multi-position Noise-resistant Codes
10.20 – 10.30	Roman Bakhmut, Nataliia Kunanets, Volodymyr Pasichnyk, Olga Artemenko and Ivan Tsmots. Using augmented reality WEB-application for providing virtual excursion tours in university campus
10.30 – 10.40	Viktor Shynkarenko, Larysa Zhuchyi and Oleksandr Ivanov. Conceptualization of the tabular knowledge representation
10.40 – 10.50	Oleksii Duda, Nataliia Kunanets, Serhii Martsenko, Volodymyr Pasichnyk and Vyacheslav Nykytyuk. COVID-19 data collections and analytical processing
10.50 – 11.00	Oksana Mulesa, Anatolii Batyuk, Fedir Geche, Olena Melnyk, Mykola Palinchak and Tamara Radivilova. Information technology for time series forecasting based on the evolutionary method of the forecasting scheme synthesis
11.00 – 11.10	Oleg Riznyk, Yulia Miyushkovych, Roman Martsyshyn, Natalya Kustra and Bohdan Balych. Non-Equidistant Location of Objects in Space
11.10 – 11.20	Tetiana Kovaliuk, Nataliya Kobets, Volodymyr Pasichnyk and Nataliia Kunanets. Knowledge-Based Recommender Systems for the Construction of Individual Educational and Career Trajectories
11.20 – 11.30	Stepan Tchynetskyi, Roman Peleshchak, Ivan Peleshchak and Victoria Vysotska. A Neural Network Development for Multispectral Images Recognition
11.30 – 11.40	Yuriy Pankiv, Natalija Kunanets, Olga Artemenko, Antonii Rzheuskyi and Serhii Osadchuk. Methods and Technology of Forming Recommendations in Urban Vehicle Parking Systems
11.40 – 11.50	Roman Stupen, Zoriana Ryzhok, Nazar Stupen, Halyna Dudych and Oksana Stupen. Crop Yielding Capacity Modeling using Artificial Neural Networks
11.50 – 12.00	Sergey Bushuyev, Natalia Bushuyeva, Alla Bondar and Svitlana Onyshchenko. Modelling projects portfolio structure dynamics of the organization development with resistance of information entropy
12.00-12.10	Oleh Palka, Andrii Stanko, Lyubomyr Matiichuk, Nataliia Martsenko and Oleksandr Matsiuk. Smart City: A Review of Model Architecture and Technology

September 24**14:00 – 16:00****Mathematical modeling in computer science****Session 5.2****Chairman: Prof. Liubov Zhuravchak**

14.00 – 14.10	Halyna Osukhivska, Ievgeniia Tysh, Taras Lobur, Inna Shylinska and Serhii Lupenko. Method for Estimating the Convergence Parameters of Dynamic Routing Protocols in Computer Networks
14.10 – 14.20	Serhii Lupenko, Iaroslav Lytvynenko, Oleg Nazarevych, Volodymyr Hotovych and Grigorii Shymchuk. Mathematical model of gas consumption process in the form of cyclic random process
14.20 – 14.30	Sergei Yelmanov and Yuriy Romanyshyn. Image Enhancement Using Gain-Limited Contrast Stretching Technique
14.30 – 14.40	Vitaliy Pavlenko, Tetiana Shamanina and Vladislav Chori. Identity Recognition Based on the Volterra Model of the Oculo-Motor System
14.40 – 14.50	Mariia Pyvovar, Olha Pohudina and Dmitriy Kritskiy. Multi-agent modeling of the spread of diseases using the example of coronavirus disease COVID-19
14.50 – 15.00	Alexandr Trunov and Zhan Byelozyorov. Formation of a model for determining the coordinates according to the registration of the characteristic phases of the wave sources of sound anomalies
15.00 – 15.10	Iryna Venhryn, Stepan Shapoval, Orest Voznyak, Oleksandra Datsko and Bogdan Gulai. MODELLING OF OPTICAL CHARACTERISTICS OF THE THERMAL PHOTOVOLTAIC HYBRID SOLAR COLLECTOR
15.10 – 15.20	Ahmet Can Cakil and Fatih Özkaynak. A Hybrid Key Schedule Algorithm Based on Blum Blum Shub Generator and Chaotic Systems
15.20 – 15.30	Vasyl Havrysh and Lubov Kolyasa. Temperature field in a thermosensitive plate with local heating
15.30 – 15.40	Vasyl Lytvyn, Victoria Vysotska, Myroslava Bublyk, Aleksandr Gozhyj and Vadim Schuchmann. Solving Scheduling Issues Methods Analysis in Computational Grid
15.40 – 15.50	Pawel Tarasiuk, Adam Wojciechowski and Mykhaylo Yatsymirskyy. Iterative Radix-2 FHT Algorithm with DIF that Minimizes Number of Computed Twiddle Factors

September 24**10:00 – 13:30****Software engineering****Session 6****Chairman: Prof. Vitaliy Yakovyna**

10.00 – 10.10	Roman Bazylevych, Paweł Czarnul and Andrii Franko. Decomposition of the unit test generation task for parallel computations
10.10 – 10.20	Tetiana Hovorushchenko, Olga Pavlova and Volodymyr Avsiyevych. Method of Assessing the Impact of External Factors on Geopositioning System Operation Using Android GPS API
10.20 – 10.30	Yauhen Klimiankou. Compile-Time Evaluations on Target ISA Basis
10.30 – 10.40	Maksym Seniv and Bohdan Terenchyn. REAL ESTATE SELECTION SOFTWARE WITH MACHINE LEARNING ELEMENTS
10.40 – 10.50	Roman Butsiy, Serhii Lupenko and Andrii Zozulya. Comprehensive justification for the choice of software development tools and hardware components of a multi-channel neurointerface system
10.50 – 11.00	Vitaliy Yakovyna and Bohdan Uhrynovskiy. Aging of Native and Flutter Applications in Android OS in Various Usage Scenarios
11.00 – 11.10	Katherine Pisarenko and Tatyana Onishenko. The method of dynamic generating a forecast depending on the user's story
11.10 – 11.20	Dmytro Fedasyuk and Illia Lutsyk. Tools for adaptation of a mobile application to the needs of users with cognitive impairments
11.20 – 11.30	Olexander Belej, Nataliia Spas and Iryna Artyschchuk. Development of an Algorithm for Detecting Cyberattacks in Distributed Information Systems
11.30 – 11.40	Paweł Tarasiuk, Adam Wojciechowski and Mykhaylo Yatsymirskyy. Global Indexing Scheme for Reduced Number of Applied Twiddle Factors in Split-Radix FFT Algorithms
11.40 – 11.50	Sergiy Prykhodko, Andrii Prykhodko and Ivan Shutko. Estimating the Size of Web Apps Created Using the CakePHP Framework by Nonlinear Regression Models with Three Predictors
11.50 – 12.00	Daria Kuzovkova, Yulia Miyushkovych and Roman Martsyshyn. Web Service for Visualization Numerical Data
12.00 – 12.10	Oleksandr Nesterenko and Jurij Selin. The Teams Information Model for Software Engineering Management
12.10 – 12.20	Taisa Borovska and Dmytro Hryshyn. Comparative Analysis of Methods for Optimizing Production Systems based on Hamiltonian and the Method of Optimal Aggregation
12.20 – 12.30	Andriy Sultanov, Maksym Protsyk, Maksym Kuzyshyn, Daria Omelkina, Vyacheslav Shevchuk and Oleg Farenjuk. Comparison of performance of the popular approaches to implementing parallel crawlers
12.30 – 12.40	Tetiana Hovorushchenko and Olga Pavlova. Multi-Agent Technology for Assessing the Availability of Information at the Software Development Initial Stages
12.40 – 12.50	Halyna Khodiakova and Nataliia Khodiakova. Creating a reusable infrastructure for continuous integration in software engineering
12.50 – 13.00	Euvgene Druzhinin, Valeriy Cheranovskiy and Sergii Stetsenko. Rational use of simulation methods while development of technically complex objects.
13.00 – 13.10	Igor Ruban, Hennadii Khudov, Oleksandr Makoveichuk, Irina Khizhnyak, Vladyslav Khudov, Volodymyr Maliuha, Iryna Yuzova and Oleksii Serdiuk. The Development of a Forecasting Model for the Situation Based on Space Images
13.10 – 13.20	Volodymyr Fedyniak, Oleksa Hryniv, Oleksandr Sobkovych, Bohdan Vey and Oleg Farenjuk. Productivity comparison of the popular parallel programming approaches on Computational Fluid Dynamics problem
13.20 – 13.30	Roman Melnyk, Daryna Hatsosh and Yevheniya Levus. Contacts Detection in PCB Image by Thinning, Clustering and Flood-filling

September 24

14:00 – 17:20

Applied linguistics

Session 7

Chairman: Prof. Olena Levchenko

14.00 – 14.10	Nataliia Hrytsiv, Tetiana Shestakevych and Julia Shyyka. Ernest Hemingway's "Fiesta: The Sun Also Rises": profiling lexical level
14.10 – 14.20	Nataliia Hrytsiv, Olha Kulyna and Christina Zakala. English – Ukrainian Aviation Terminology: compiling bilingual digital dictionary
14.20 – 14.30	Olha Kulyna and Olena Vovk. Statistical profile of the candidate for a post in the field of information technology
14.30 – 14.40	Marta Karp, Nataliia Kunanets, Ivan Bekhta and Uliana Yurlova. Linhvometriia of inversion and detachment in Ray Bradbury's Dandelion Wine
14.40 – 14.50	Alina Dmytriv, Victoria Vysotska and Myroslava Bublyk. The Speech Parts Identification for Ukrainian Words Based on VESUM and Horokh Using
14.50 – 15.00	Solomiia Kubinska, Victoria Vysotska and Yurii Matseliukh. User Mood Recognition and Further Dialog Support
15.00 – 15.10	Nataliia Romanyshyn. Stylistic Resources of Poetic Text through the Prism of Tropes Semantics: a Synergy of Cognitive and Corpus Based Approaches
15.10 – 15.20	Maksym Vakulenko. From Semantic Metrics to Semantic Fields
15.20 – 15.30	Inna Demidovich, Viktor Shynkarenko, Olena Kuropiatnyk and Oleksandr Kirichenko. Processing Words Effectiveness Analysis in Solving the Natural Language Texts Authorship Determination Task
15.30 – 15.40	Olena Levchenko and Marianna Dilai. A method of automated corpus-based identification of metaphors for compiling a dictionary of metaphors: a case study of emotion conceptual domain
15.40 – 15.50	Solomiia Albota. Semantic Analysis of the Reddit Vaccination News Feed in the Reddit Social Network
15.50 – 16.00	Svitlana Petrasova and Nina Khairova. Event Extraction from News Media Based on Knowledge and Data-Driven Methods
16.00 – 16.10	Iryna Khomytska, Teslyuk Vasyl, Khrystyna Prysyazhnyk and Natalia Hrytsiv. The Lehmann-Rosenblatt Test Applied for Determination of Statistical Parameters of Charles Dickens's Authorial Style
16.10 – 16.20	Danylo Ivanchyshyn, Victoria Vysotska and Solomiia Albota. The Film Script Generation Analysis Based on the Fiction Book Text Using Machine Learning
16.20 – 16.30	Nataliya Bondarchuk, Ivan Bekhta, Vasyl Bialyk and Oksana Marchuk. Processing Modality of British Modernist and Postmodernist Fiction
16.30 – 16.40	Vasyl Lytvyn, Myroslava Bublyk, Lyubomyr Chyrun, Vitaliy Danylyk, Valentyna Panasyuk and Olha Korolenko. The Lexical Innovations Identification in English-Language Eurointegration Discourse for the Goods Analysis by Comments in E-Commerce Resources
16.40 – 16.50	Olena Levchenko, Valentyna Holtvian and Marianna Dilai. Statistical profiles of Ukrainian prose fiction: gender aspect
16.50 – 17.00	Vasyl Starko, Andriy Rysin and Maria Shvedova. Ukrainian Text Preprocessing in GRAC
17.00 – 17.10	Maria Shvedova, Andriy Rysin and Vasyl Starko. Handling of Nonstandard Spelling in GRAC
17.10 – 17.20	Zoriana Haladzhu, Nataliia Kunanets, Paraskoviya Dvorianyn, Olena Makarchuk and Nataliia Veretennikova. COMPOUND WORDS AS A MEANS OF EXPRESSING CONTENT TONALITY IN THE UKRAINIAN TEXT MEDIA

September 24**14:00 – 16:20****Big data and Data science****Session 8****Chairman: Prof. Vasyl Lytvyn**

14.00 – 14.10	Bohdan Polishchuk, Andrii Berko, Myroslava Bublyk, Lyubomyr Chyrun and Vadim Schuchmann. The Rain Prediction in Australia Based Big Data Analysis and Machine Learning Technology
14.10 – 14.20	Andrii Dyriv, Vasyl Andrunyk, Lyubomyr Chyrun, Yevhen Burov and Ihor Karpov. The User's Psychological State Identification Based on Big Data Analysis for Person's Electronic Diary
14.20 – 14.30	Denys Aksonov, Aleksandr Gozhyj, Irina Kalinina and Victoria Vysotska. Question-Answering Systems Development Based on Big Data Analysis
14.30 – 14.40	Vasyl Andrunyk, Tetiana Shestakevych and Diana Koshtura. The text analysis software for hearing-impaired persons
14.40 – 14.50	Andrii Mykytiuk, Victoria Vysotska and Solomiia Albota. Spam Filtration System with the Use of Machine Learning Technology
14.50 – 15.00	Maria Zanchak, Victoria Vysotska and Solomiia Albota. The Sarcasm Detection in News Headlines Based on Machine Learning Technology
15.00 – 15.10	Olexander Hladun, Andrii Berko, Myroslava Bublyk, Lyubomyr Chyrun and Vadim Schuchmann. Intelligent system for Film Script Formation Based on Artbook Text and Big Data Analysis
15.10 – 15.20	Viktor Hryhorovych. Construction of Normalized Metric for Hierarchical Data Structures based on Harmonic Functions
15.20 – 15.30	Kevin Matthe Caramancion. The Relation Between Time of the Day and Misinformation Vulnerability: A Multivariate Approach
15.30 – 15.40	Rocky Telatko, Eric Brandt and Felix Brandt. Method for Identifying, Measuring and Quantifying Fluctuations in Production Systems
15.40 – 15.50	Serhii Voloshyn, Roman Peleshchak, Ivan Peleshchak and Victoria Vysotska. Big Data Analysis for Multispectral Images Recognition Based on Deep Learning
15.50 – 16.00	Alexandr Kuznetsov and Anna Kononchenko. Data Hiding in Vector Images
16.00 – 16.10	Amer Al-Badarneh, Adam Boulad, Omar Al Daher and Aya Al-Badarneh. The Impact of Environmental and Economic Factors on Skin Cancer
16.10 – 16.20	Andrii Berko, Yurii Matseliukh, Yurii Ivaniv, Lyubomyr Chyrun and Vadim Schuchmann. The Text Classification Based on Big Data Analysis for Keyword Definition Using Stemming

September 25

10:00

Final session

Chairman: Prof. M. Medykovsky, Prof. N. Shakhovska

Secretary: Tetiana Shestakevych

- 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.**