

WEST UKRAINIAN NATIONAL UNIVERSITY, UKRAINE
WROCLAW UNIVERSITY OF ECONOMICS AND BUSINESS, POLAND
UNIVERSITY OF SOUTH BOHEMIA, CZECH REPUBLIC
DEGGENDORF INSTITUTE OF TECHNOLOGY, GERMANY
CATHOLIC UNIVERSITY IN RUŽOMBEROK, SLOVAKIA
IEEE POLAND SECTION / SYSTEM MAN AND CYBERNETICS SOCIETY SMC-28
TERNOPIL REGION ASSOCIATION OF PROFESSIONALS IN COMPUTER
INFORMATION TECHNOLOGY, UKRAINE

2023 13th International Conference on
**ADVANCED COMPUTER
INFORMATION TECHNOLOGIES**
CONFERENCE PROGRAM



Wrocław, Poland
21-23 September 2023

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- West Ukrainian National University, Ukraine
- Wroclaw University of Economics and Business, Poland
- University of South Bohemia, Czech Republic
- Deggendorf Institute of Technology, Germany
- Catholic University in Ružomberok, Slovakia

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CONFERENCE SECTIONS

Section ID	Section Title / Location
S1	Computational Intelligence and Mathematical Modelling
S2	Information in Economy and Management
S3	Cyber Security
S4	Specialized Information and Computer Systems
S5	Artificial Intelligence and Cognitive Systems
S6	Information Technology in Education

CONFERENCE STATISTICS

Number of submitted papers – 255, Number of accepted papers –139, Acceptance rate – 55 %

PARTICIPANTS BY COUNTRY

Algeria, Australia, Austria, Azerbaijan, Botswana, Brazil, Bulgaria, Cameroon, Canada, China, Congo, Cyprys, Czech Republic, Denmark, Egypt, England, Estonia, Finland, France, Gabon, Georgia, Germany, Ghana, Greece, Guinea, India, Indonesia, Israel, Italy, Kazakhstan, Kosovo, Latvia, Libya, Lithuanian, Malaysia, Moldova, Namibia, Netherlands, Norway, Pakistan, Poland, Romania, Slovakia, South Africa, Spaine, Sri Lanka, Tunis, Turkey, Ukraine, United Arab Emirates, United Kingdom, USA, Uzbekistan, Zambia

CONFERENCE TIMETABLE

Physical location	Wroclaw, ul. Komandorska 118/120, Building W		
	Room 3	Room 4	Room 4a
Zoom	Zoom 1	Zoom 2	Zoom 3
Thursday, 21.09.2023			
8:30 - 10:00	Registration & Coffee (Hall, Building W)		
10:00 - 10:45	Opening Ceremony (Room 4 / Zoom 2)		
11:00 - 13:00	S1. Block A	S2. Block A	S4. Block A
13:00 - 14:00	Lunch (Bazylia Restaurant, Building P, 1-st floor)		
14:00 - 15:30	S1. Block B	S2. Block B	S5. Block A
16:00 - 18:00	Excursion (guided tour – Wroclaw sightseeing)		
18:30 - 20:00	Dinner (Marche Restaurant, Sky Tower)		
Friday, 22.09.2023			
9:00 - 11:00	S1. Block C	S2. Block C	S4. Block B
11:00 - 11:30	Coffee break (Hall, Building W)		
11:30 - 13:00	S1. Block D	S2. Block D	S5. Block B
13:00 - 14:00	Lunch (Bazylia Restaurant, Building P, 1-st Floor)		
14:00 - 15:30	S3. Block A	S2. Block E	S6. Block A
16:00 - 17:00	University tour		
17:30 - 21:00	Dinner - Campfire		
Saturday, 23.09.2023			
9:00 - 10:30	S1. Block E	Poster Section (Hall, Building W)	S5. Block C
10:30 - 11:00	Meeting of the Board (Room 3)		
11:00 - 11:30	Closing Ceremony (Room 4 / Zoom 2)		

ID	Title Section
S1	Computational Intelligence and Mathematical Modelling
S2	Information in Economy and Management
S3	Cyber Security
S4	Specialized Information and Computer Systems
S5	Artificial Intelligence and Cognitive Systems
S6	Information Technology in Education
Poster Section	Poster Section (S1, S2, S4, S5, S6)

All schedules of the conference are based on Central European Summer Time

PARTICIPANTS INSTRUCTION

The conference will be held as hybrid conference, attendees can attend the conference virtually from anywhere or even opt to visit the physical venue.

Online participation will take place via software ZOOM. The software will install once before using it, by clicking the link to the zoom room. Follow the installation instructions. On the website zoom.us you can also find the download and installation instructions. It is not necessary to create an account in zoom for joining the conference.

The conference will be held in the following ZOOM Meeting rooms. Either use the link below or in the programme or copy the Meeting ID to your Zoom-Software:

Name	Zoom Address	Meeting-ID	Code
Zoom 1	https://wunu-edu-ua-ternopil.zoom.us/my/room1	339 812 3203	2023
Zoom 2	https://wunu-edu-ua-ternopil.zoom.us/my/room2	936 448 8755	
Zoom 3	https://wunu-edu-ua-ternopil.zoom.us/my/room3	557 583 2940	

TIME LIMITS

Presentation: 7-10 minutes short presentation during the ZOOM Online Session or Offline.

Poster: 3-5 minutes short video presentation to workshopacit@gmail.com or Offline.

Discussion: 5 minutes after each presentation.

OPENING CEREMONY

Thursday, 21 September

10:00 - 10:45

Location: Zoom 2 / Room 4

Welcome Speech and Participants Congratulation

S1: Computational Intelligence and Mathematical Modelling. Block A

Date: Thursday, 21 September

11:00 – 13:00

Session Chairs: Volodymyr Stepashko, Andriy Pukas

Location: Zoom 1 / Room 3

1. *Ninel Pomazova, Natalia Porplytsya, Oksana Homotiuk, Yurii Maslyak, Ivan-Stanislaw Mazur, Iryna Nedoshytko.* Mathematical Tools And Software System For Purchase Planning And Selection Of Building Materials
2. *Mykola Dyvak, Oleksandr Kindzerskyi, Libor Dostalek, Mykola Stetsko, Joachim Nowak.* Parallel Computations in the Problem of Identification of Interval Discrete Models based on Swarm Intelligence of a Bee Colony
3. *Manan Roy Choudhury, Ishan Banerjee.* A Perusal of Algebraic and Computational Modelling on Matrix Multiplication Time Complexity
4. *Andrii Pavlov.* High-Performance GMDH Algorithm of Neural Network Type for Solving Big-Data Modelling Problems
5. *Stefan Panic, Nebojsa Arsic, Marko Smilic, Milan Popovic, Caslav Stefanovic, Hranislav Milosevic.* Novel κ - μ based Model for Land Mobile Satellite Channels
6. *Andriy Pukas, Vitalii Smal, Iryna Voytyuk, Oleksandr Papa, Iryna Belova, Olga Zavytii.* Energy Consumption Prediction Module in the Linoleum Production
7. *Olha Kovalchuk, Serhiy Banakh, Mariia Masonkova, Nadiia Moskaliuk, Nina Rohatynska, Oleksandr Pustovyi.* Survival Analysis Models for Estimating and Predicting the Risks of Confession of Criminal Defendants
8. *Larysa Malanchuk, Inna Pitsyk, Mariia Riabokon, Artem Malanchuk, Serhiy Malanchuk, Olha Kovalchuk.* Models for Estimating Manifestation of Cervical Pathology Progression under Various Conditions

S1: Computational Intelligence and Mathematical Modelling. Block B

Date: Thursday, 21 September

14:00 – 15:30

Session Chairs: Volodymyr Stepashko, Andriy Pukas

Location: Zoom 1 / Room 3

1. *Mykola Dyvak, Volodymyr Manzhula, Taras Dyvak.* The Method of Structural Identification of Interval Nonlinear Models with the Selection of Structural Elements based on the Gradient of the Objective Function
2. *Vasyl Tymchyshyn, Bohdan Tymchyshyn, Andriy Melnyk, Volodymyr Manzhula, Vasyl Faifura, Ihor Romanets.* The System Architecture of the Software for Modeling Harmful Emissions in Soil
3. *Olga Ivanets, Mikle Burichenko, Pavlo Schapov, Iryna Morozova, Maryna Arkhyrei, Pavlo Kulakov.* Features of Evaluation of Risks for Complex Objects

4. *Lesia Buiak, Kateryna Pryshliak, Oksana Bashutska, Lilia Buiak, Tetiana Polozova*. Simulation and Forecasting of Agricultural Land Market Development
5. *Volodymyr Stepashko, Yevheniya Savchenko-Syniakova, Olha Moroz, Halyna Pidnebesna, Olena Tokova, Yaroslav Linder*. Comparative Performance of Algorithms for Inductive Modeling the Cooling Process of a Metal Casting
6. *Oleksandr Andreykiv, Iryna Dolinska, Sviatoslav Nastasiak, Vasyl Sheketa*. Mathematical Modeling of Hydrogen Cracks Growth Kinetics in Metallic Materials at High Hydrogen Parameters

S1: Computational Intelligence and Mathematical Modelling. Block C

Date: Friday, 22 September

9:00 – 11:00

Session Chairs: Volodymyr Lytvynenko, Volodymyr Manzhula

Location: Zoom 1 / Room 3

1. *Leonid Lyubchik, Yuri Dorofieiev, Maxim Malko*. Modeling of Disturbance Rejection in Combined Feedwater Control Systems for Steam Generators in Nuclear Power Plants
2. *Ihor Javorskyj, Roman Yuzefovych, Oleh Lychak, Pavlo Semenov, Roman Sliepko, Yulia Romanyshyn*. Model for Analysis of High-Frequency Modulated Random Signals
3. *Oleksandr Solomentsev, Maksym Zaliskyi, Oleksiy Zuiev, Onyedikachi Chioma Okoro, Olga Shcherbyna, Bohdan Chumachenko*. A Procedure for Failures Diagnostics of Aviation Radio Equipment
4. *Inna Chaikovska, Maksym Chaikovskiy*. Economic and Mathematical Models for Determining the Level of Maturity of an Enterprise in Knowledge Management and Project Management
5. *Olena Syrotkina, Ziad Kobti, Mykhailo Aleksieiev, Borys Moroz, Iryna Udovyk, Hennadii Shvachych*. Mathematical Modeling and Analysis of Patterns in Structured Collections of Big Data
6. *Michaela Zahradníková, Jan Eisner*. Dependence of a Contact Set on a Stiffness of an Obstacle Unilaterally Supporting a Beam
7. *Andrii Bomba, Oksana Ostapchuk, Roman Vovk, Miroslav Kopnický*. Modeling the One Class of Radionuclide Migration Processes in Soils Under Non-Isothermal Conditions Using Perturbation Theory Methods
8. *Andrii Bomba, Igor Moroz*. Analysis of Nonlinear Processes in the P-I-N Diodes Plasma by the Perturbation Theory Methods

S1: Computational Intelligence and Mathematical Modelling. Block D

Date: Friday, 22 September

11:30 – 13:00

Session Chairs: Volodymyr Lytvynenko, Volodymyr Manzhula

Location: Zoom 1 / Room 3

1. *Igor Grebennik, Olga Chorna, Inna Urniaieva.* Visualizing Feasible Regions for Optimization Problems on High-Dimensional Permutations using Dimensionality Reduction Methods
2. *Leonid Lyubchyk, Halyna Holotaistrova, Galyna Grinberg, Olga Kostyuk.* Averaged Dynamic Models of Queuing Networks with Finite Buffer Capacity and Blocking
3. *Yaroslav Pyanylo, Sofiya Tvardovska, Nazariy Lopuh.* The Development of Analytical and Numerical Methods for Research of Porous Mediums
4. *Yaroslav Pyanylo, Zoia Prytula, Myroslav Prytula, Olha Hymko, Nazar Prytula, Halyna Pyanylo.* Hydrodynamic Studies of Underground Gas Storages
5. *Artur Skoczylas, Wiesława Gryniewicz.* State Based Modelling of Haul Truck Operation in Underground Mines
6. *Olha Sushchenko, Yurii Bezkorovainyi, Olexander Salyuk, Artem Kovalenko.* Determining Performances of Inertially Stabilized Platform based on Mathematical Modelling

S1: Computational Intelligence and Mathematical Modelling. Block E

Date: Saturday, 23 September

9:00 – 10:30

Session Chairs: Wiesława Gryniewicz, Ewa Walaszczyk

Location: Zoom 1 / Room 3

1. *Yevhen Pistun, Halyna Matiko, Hanna Krykh.* Mathematical Model of Device for Measuring Rheological Parameters of Viscoplastic Liquids
2. *Mykhaylo Andriychuk, Yarema Kuleshnyk.* Amplitude Optimization in the Nonlinear Synthesis Problems
3. *Markian Nakonechnyi, Orest Ivakhiv, Yuriy Hirniak, Yuriy Nakonechnyi, Oleksandr Viter.* Study of the Car Speed Control System Using the Variable Structure Principle
4. *Ilya Pyatin, Juliy Boiko, Oleksander Eromenko, Lesya Karpova.* Mathematical Modeling of an OFDM Communication System with Efficient Digital Signal Processing
5. *Igor Boyko.* Mathematical Model of Tunneling Transport in Nanosystems with the Influence of Optical Phonons
6. *Maksym Zaliskyi, Oleksandr Solomentsev, Oleksiy Zuiev, Yuliia Petrova, Alina Osipchuk, Serhii Migel.* Algorithms of Technical Condition Monitoring for Radio Equipment

S1: Computational Intelligence and Mathematical Modelling. POSTER

Date: Saturday, 23 September

9:00 – 10:30

Session Chairs: Volodymyr Stepashko, Volodymyr Manzhula

Location: Hall in Building W

1. *Alexey Galuza, Olga Kostiuk, Artem Nikulchenko, Olena Akhiezer, Olga Tevyasheva, Mykola Aslandukov.* Optimization of the Pattern-Based Model for Short-Term Clothing Sales Quantity Forecasting in Retail
2. *Anatoly Voronin, Olena Akhiezer, Alexey Galuza, Irina Lebedeva, Yurii Zaitsev, Stepan Lebedev.* Modeling Competitive Interaction “Predator-Prey” on the Example of Two Innovative Processes
3. *Mykola Dyvak, Roman Pasichnyk, Natalia Porplytsya, Volodymyr Fronchko, Vasyl Yakoviv, Veronika Bandžuchová.* A Method of Studying the Completeness of Interval Discrete Models Built on the Basis of Intelligent Computing
4. *Mykola Dyvak, Andriy Melnyk, Natalia Porplytsya, Volodymyr Manzhula, Andriy Mushak, Vita Semaniuk.* Identification of Interval Discrete Models Based on the Bee Swarm Optimization Algorithm with Adaptive Tuning of the Probability of Selecting Structural Elements
5. *Mykola Dyvak, Natalia Porplytsya, Iryna Spivak, Vasyl Tymchyshyn, Svitlana Krepych, Martin Taraj.* The Method of Modeling the Characteristics of a Swarm of UAVs as an Object with Distributed Parameters based on the Analysis of Interval Data
6. *Mykola Dyvak, Andrii Melnyk, Natalia Porplytsya, Iryna Spivak, Olga Bodnar.* A New Method Identification of Interval Discrete Models of Objects with a Randomized Selection of Structural Elements

S2: Information in Economy and Management. Block A

Date: Thursday, 21 September

11:00 – 13:00

Session Chairs: Igor Grebennik, Roman Pasichnyk

Location: Zoom 2 / Room 4

1. *Inna Sysoieva, Borys Pohrishchuk, Andriy Pukas, Olena Tsikhanovska, Oleh Vatslavskyi, Olena Sydorovych.* Information Management Technology as a Tool for Making Effective Management Decisions
2. *Kateryna Zelenetska, Natalia Porplytsya, Iryna Stasiv, Sylwia Stańczyk, Anna Jankowiak, Lesia Bilovus.* SEO-Optimization Of Product Content On A Marketplace Platform
3. *Olga Ivanova, Viacheslav Laptiev, Olha Poliakova, Viktor Ostroverkhov, Ewa Stańczyk-Hugiet.* Modeling Scenarios of Territorial Communities Spatial Development
4. *Nataliia Dziubanovska, Vadym Maslii, Andriy Krysovaty, Oksana Desyatnyuk, Bogusława Drelich-Skulska.* The Effects of Digital Economy on International Trade: An Empirical Analysis of EU Countries Panel Data

5. *Nataliia Dziubanovska, Vadym Maslii*. The Impact of Environmental Protection Expenditures on the Reduction of Greenhouse Gas Emissions: Panel Data of EU
6. *Nazar Podolchak, Volodymyr Martyniuk, Natalia Tsygylyk*. Universal Calculation of the Optimal Number of Civil Servants using Artificial Neural Networks
7. *Zenovii-Mykhailo Zadorozhnyi, Volodymyr Muravskiy, Nataliia Pochynok, Vasyl Muravskiy, Anton Shevchuk, Martin Majda*. Application of Chatbots with Artificial Intelligence in Accounting
8. *Zenovii-Mykhailo Zadorozhnyi, Oksana Desyatnyuk, Volodymyr Muravskiy, Oleg Shevchuk*. Combination of Digital Twin Technology and FinOps in Management Accounting Modeling

S2: Information in Economy and Management. Block B

Date: Thursday, 21 September

14:00 – 15:30

Session Chairs: Igor Grebennik, Roman Pasichnyk

Location: Zoom 2 / Room 4

1. *Andrii Oliinyk, Ellana Molchanova, Liudmyla Sierova, Yuriy Kulyk, Liudmyla Huliaieva, Ianina Tkachenko*. ICT Services Market's Impact on ICT-Enabled Services Market: Comparative Cross-Country Analysis
2. *Larysa Shaulska, Tetiana Stepura*. Inequality in the Labor Market of Ukraine: an Evaluation of Regional Differentiation Using Microdata
3. *Lesia Buiak, Viktor Lopatovskiy, Liudmyla Yemchuk, Volodymyr Dzhulii, Larysa Dzhulii, Valentyna Bobrovnyk*. Organizational Aspects of the Management Process based on the Systems Approach, Informatization and Modelling
4. *Iryna Yepifanova, Viacheslav Dzhedzhula*. Assessment of the Level of Intellectual Capital of Industrial Enterprises
5. *Alina Zhukovska, Tetiana Zheliuk, Dmytro Shushpanov, Vasyl Brych, Oleksandr Brechko, Nataliia Kryvokulska*. Management of the Development of Artificial Intelligence in Healthcare
6. *Tetiana Zheliuk, Oleksandr Brechko, Alina Zhukovska, Dmytro Shushpanov, Vasyl Vorobets, Anatolii Gutsuliak*. Management of Information Processes of the Economy in Conditions of Digitalization

S2: Information in Economy and Management. Block C

Date: Friday, 22 September

9:00 – 11:00

Session Chairs: Artur Rot, Olena Liashenko

Location: Zoom 2 / Room 4

1. *Serhii Robotko, Andrii Topalov, Victoria Lukashova, Valeriy Zaytsev, Dmytro Zaytsev*. A Machine Learning Study on World Economic Impact of Intellectual Property Rights on GDP Growth with a Focus on Poland

2. *Mariia Voronenko, Elizaveta Mikhailova, Nataliia Savina, Iryna Lurie, Volodymyr Lytvynenko.* A Bayesian Network Approach to Measure the Impact of Factors Characterizing the State of Educational Institutions on the Gross Domestic Product
3. *Pavlo Hryhoruk, Nila Khrushch, Svitlana Grygoruk.* A Novel Method for Determining Weighting Coefficients in the Block Convolution Model of the Managerial Decisions Effectiveness Comprehensive Assessment
4. *Sviatoslav Kniaz, Vasyl Brych, Nelli Heorhiadi, Yuriy Tyrkalo, Halyna Luchko, Volodymyr Martyniuk.* Methodological Approach to the Formation of Information Support for Business Risk Management Entities
5. *Oksana Adamyk, Vladlena Benson, Bogdan Adamyk, Haider Al-Khateeb, Anitha Chinnaswamy.* Does Artificial Intelligence Help Reduce Audit Risks?
6. *Halyna Matviienko, Svitlana Kucherkova, Viktoriia Yanovska, Viktoriia Hurochkina, Volodymyr Ternovsky, Marcin Kęsy.* Governmental Management and Regulatory Measures for Advancing AI in the Ukrainian Energy Sector as a Basis for Rapid and sustainable development of the Ukrainian Economy
7. *Tetiana Zatonatska, Olena Liashenko, Vadym Pakholchuk, Dmytro Zatonatskiy.* The Impact of Investments in Digital Development on Employment in the Information and Communications Technology (ICT) Sector
8. *Olexandr Yemelyanov, Kateryna Petrushka, Orest Koleshchuk, Tetyana Petrushka, Liubov Luchyt.* Assessment of Information Support for Management of Organizational and Technological Inertia of Energy Consumption Processes at Enterprises

S2: Information in Economy and Management. Block D

Date: Friday, 22 September

11:30 – 13:00

Session Chairs: Artur Rot, Olena Liashenko

Location: Zoom 2 / Room 4

1. *Sviatoslav Kniaz, Vasyl Brych, Nelli Heorhiadi, Yuriy Tyrkalo, Halyna Luchko, Ruslan Skrynkovskyy.* Data Processing Technology in Choosing the Optimal Management Decision System
2. *Artur Rot, Malgorzata Sobinska, Peter Busch.* Programming Teams in Remote Working Environments: an Analysis of Performance and Productivity
3. *Olha Kovalchuk, Kateryna Berezka, Iryna Danylyuk, Ludmila Babala, Pavlo Chopyk, Pavlo Basisty.* Modeling Russian-Ukrainian War Impact on Global Food Safety. Preliminary Evaluations
4. *Magdalena Parcheva.* Specifics of the Quality of Work at Platform Workers from Bulgaria
5. *Iryna Strutynska, Halyna Kozbur, Lesia Dmytrotsa, Olha Hlado, Ihor Kozbur, Nadiia Gashchyn.* Analysis of the SMEs' Digitalization State Using HIT Index and Machine Learning Technique

6. *Serhii Spivak, Tetyana Korolyuk, Iryna Spivak, Svitlana Krepych, Bartłomiej Nita, Ruslan Brukhanskyi*. Construction of a Conceptual Model of the Accounting and Analytical System of Report Formation Under IFRS

S2: Information in Economy and Management. Block E

Date: Friday, 22 September

14:00 – 15:30

Session Chairs: Roman Zvarych, Roman Pasichnyk

Location: Zoom 2 / Room 4

1. *Olga Gonchar, Anatoliy Kholodenko, Yuliia Navrozova*. Optimization of Port Services Quality Indicators
2. *Olga Gonchar, Anatoliy Kholodenko, Nataliia Shpak*. Optimization of Specific Custom Tariffs in the International Economic System
3. *Lesia Buiak, Serhii Matiukh, Olga Gonchar, Liudmyla Yemchuk, Larysa Dzhulii, Lesia Bilorusets*. Methods and Models in Management Decision-making
4. *Roman Zvarych, Igor Rivilis, Małgorzata Domiter, Przemysław Skulski, Mykhailo Oleksiiv, Michal Janiga*. Information Support for Postwar Economy Recovery of Ukraine
5. *Olena Syrotkina, Suparno Bhatta, Kevin Patrick Jacob*. Recency-Frequency-Monetary Analysis and Recommendation System using Apriori Algorithm on E-Commerce Sales Data
6. *Oleh Sokil, Nazar Podolchak, Mariia Vesolovska, Daria Trachova*. Impact Well-being Indicator on Emotional Intelligence Sustainable Development in Poland and Ukraine

S2: Information in Economy and Management. POSTER

Date: Saturday, 23 September

9:00 – 10:30

Session Chairs: Artur Rot, Igor Grebennik

Location: Hall in Building W

1. *Kateryna Kovtoniuk, Ellana Molchanova, Oleksandr Savych, Yuliya Demkiv, Oksana Piankova, Alevtyna Kudinova*. Estimation of the Impact of Macroeconomic Factors on Investment Activity in Ukraine
2. *Andriy Krysovaty*. Econometric Modeling of Post-war Tax and Debt Finances of Ukraine
3. *Svitlana Pryima, Roman Vovk, Volodymyr Vovk*. Analysis of Science and Technology Development of Countries
4. *Andrii Zubyk, Nataliia Mishchuk, Bohdan Melnyk, Rostyslav Mykhailyshyn, Anna Ivanova*. Determination of the Diversity Index of Applicants to the Ivan Franko National University of Lviv and its Visualisation in GIS
5. *Nataliia Mishchuk, Yuriy Eliyashevskyy, Bohdan Melnyk, Volodymyr Shvets, Viktor Rusin*. Analysing the Demand and Forecasting the Number of Applicants at Ivan Franko National University of Lviv

6. *Yaroslav Marchuk, Bohdan Melnyk, Nataliya Melnyk*. Analysis of the Speed of Execution of Business Logic in Applications Created in Different Software Environments

S3: Cyber Security. Block A

Date: Friday, 22 September

14:00 – 15:30

Session Chairs: Libor Dostálek, Ruslan Shevchuk

Location: Zoom 1 / Room 3

1. *Yuri Boiko, Iluju Kiringa, Tet Yeap*. Extended Pulsation Attack Against Kalman Filter Driven BLDC Motor Control System
2. *Thendo Phophi Mbambala, Hanifa Abdullah*. Promoting Bring Your Own Device (BYOD) Information Privacy Protection Awareness among Public Libraries in Gauteng
3. *Vitalii Falkevych, Andrey Lisnyak*. Internal and External Threats in Cyber Security and Methods for their Prevention
4. *Tetiana Korobeinikova, Illia Tachenko, Roman Chekhmestruk, Pavlo Mykhaylov, Olexandr Romanyuk, Sergey Romanyuk*. A General Method of Risk Estimation
5. *Andriy Yushko, Ruslan Shevchuk, Karol Łopaciński, Maja Leszczynska, Oleksandr Yashchuk, Tetiana Yurchyshyn*. Shielding Web Application against Cyber-Attacks using SIEM
6. *Ruslan Shevchuk, Mikolaj Karpinski, Mykhailo Kasianchuk, Ihor Yakymenko, Andriy Melnyk, Roman Tykhyi*. Software for Improve the Security of Kubernetes-based CI/CD Pipeline

S4: Specialized Information and Computer Systems. Block A

Date: Thursday, 21 September

11:00 – 13:00

Session Chairs: Anatoliy Melnyk, Vasyl Yatskiv

Location: Zoom 3 / Room 4a

1. *Ivan Ostroumov*. Localization of WiFi Access Points by Lineary Moved User Station
2. *Ivan Ostroumov*. TOA Localization with Polar Coordinates
3. *Lylia Benmessaoud, Saida Boukhedouma*. Resource Allocation in Internet of Things: Concepts and Comparison of Approaches
4. *Viktor Melnyk, Anatoliy Melnyk*. Analysis of Methods, Approaches and Tools for Organizing Self-Improvement of Computer Systems
5. *Astrid Heindel, Wolfgang Dorner, Rajan Paudyal, Laura Fiegler, Raimund Brotsack*. Modelling Resource Availability for Power-to-Gas Infrastructure – A Case Study in the Danube Basin
6. *Bartosz Szczesny, Wiesława Gryncewicz*. Quantum Advantage Applied – Research on Probability of Success

7. *Markus Peterhansl*. Remote Control of a Collaborative Robot with Virtual Reality and Joystick in a 5G Network
8. *Andrii Topalov, Dmytro Zaytsev, Valeriy Zaytsev, Serhii Robotko, Volodymyr Golikov, Victoria Lukashova*. Features of the Construction a Specialized Computer Remote Parametric Control System of a Floating Dock

S4: Specialized Information and Computer Systems. Block B

Date: Friday, 22 September

9:00 – 11:00

Session Chairs: Mykola Nikitchenko, Natalia Shakhovska

Location: Zoom 3 / Room 4a

1. *Tetiana Korobeinikova, Roman Chekhmestruk, Pavlo Mykhaylov, Olexandr Romanyuk, Oksana Romanyuk, Hamza Achanyar*. The Fault-Resistant Web Application Infrastructure Using Autoscaling
2. *Olexandr Romanyuk, Yevhen Zavalniuk, Oksana Romanyuk, Anatoliy Snigur, Nataliia Titova, Volodymyr Maidaniuk*. The Development of Physically Correct Reflectance Model Based on Logarithm Function
3. *Serhii Zinchenko, Kostiantyn Kyrychenko, Olha Grosheva, Pavlo Nosov, Ihor Popovych, Pavlo Mamenko*. Automatic Reset of Kinetic Energy in Case of Inevitable Collision of Ships
4. *Yaknan John Gambo, Tejas Shinde, Kevin Rasch, Helena Liebelt, Rui Li*. Simulation of the Quantum Key Distribution Algorithm Using the Intel Quantum SDK
5. *Lubomyr Petryshyn*. Model and Algorithm for Accelerated Analog-to-Digital Conversion based on the Additive Successive Approximation Method
6. *Yevheniia Znakovska, Yuliya Averyanova*. The Software Architecture for Weather-related Hazards Avoidance when Decision-Making Support of UAS Operators
7. *Tejas Shinde, Yaknan John Gambo, Kevin Rasch, Helena Liebelt, Rui Li*. Solving 2 by 2 Grid Sudoku Problem using Grover's Algorithm with Intel Quantum SDK
8. *Youcef Benmouna, Badr Benmammar*. Efficient Branch-and-Bound algorithm for task scheduling in cloud computing

S4: Specialized Information and Computer Systems. POSTER

Date: Saturday, 23 September

9:00 – 10:30

Session Chairs: Andriy Melnyk, Vasyl Yatskiv

Location: Hall in Building W

1. *Jan Staš, Jozef Juhár, Martin Lojka, Martin Durkaáč, Filip Hudzik*. Hear IT – A Mobile Assistive Technology for Hearing Impaired People in Slovak
2. *Vasyl Varyshchuk*. Simulation and Theoretical Analysis of Plastic Optical Fiber Surface Plasmon Resonance Sensors

3. *Andriy Segin, Ivan Albanskiy, Alina Davletova, Bogdan Maslyiak, Petro Humennyi, Stepan Ivasiev*. Special Processor for Correlation Signal Processing in the Polar Coordinate System
4. *Oleksiy Polikarovskyykh, Juliy Boiko, Vitalii Tkachuk, Hanna Yehoshyna, Yurii Daus*. Neural Network Method of Directing Finder Signals Processing in Perimeter Protection Systems

S5: Artificial Intelligence and Cognitive Systems. Block A

Date: Thursday, 21 September

14:00 – 15:30

Session Chairs: Bodyanskiy Yevgeniy, Jan Fesl

Location: Zoom 3 / Room 4a

1. *Yevgeniy Bodyanskiy, Olha Chala*. Stacking Neuro-Neo-Fuzzy System For Pattern Recognition and Its Online Learning
2. *Oksana Adamyk, Oksana Chereshnyuk, Bogdan Adamyk, Serhii Rylieiev*. Trustworthy AI: A Fuzzy-Multiple Method for Evaluating Ethical Principles in AI Regulations
3. *Rohan Habu, Rohit Ratnaparkhi, Anjali Askhedkar, Sunita Kulkarni*. A Hybrid Extractive-Abstractive Framework With Pre & Post-Processing Techniques To Enhance Text Summarization
4. *Zineddine Bettouche*. The Design of Compensators based on Root Locus Method using Artificial Neural Networks
5. *Zineddine Bettouche, Johannes Reisinger, Andreas Fischer*. Analysis of Features-Brightness Bias in Computer Vision
6. *Oleg Bisikalo, Oksana Kovtun, Viacheslav Kovtun*. Neural Network Concept of Ukrainian-Language Text Embedding

S5: Artificial Intelligence and Cognitive Systems. Block B

Date: Friday, 22 September

11:30 – 13:00

Session Chairs: Bodyanskiy Yevgeniy, Marcin Hernes

Location: Zoom 3 / Room 4a

1. *Iryna Mysiuk, Roman Mysiuk, Roman Shuvar, Volodymyr Yuzevych, Vitaliy Hudyma, Yurii Vizniak*. Category Classification of Content from Instagram Business Pages
2. *Katarzyna Korsak, Marcin Hernes, Ewa Walaszczyk, Artur Rot, Anna Grzęda*. Analysis of Skin Lesions for Cancer Detection using Convolutional Neural Networks
3. *Nanfei Yang*. Social Recommendation Based on Hierarchical Attention Network
4. *Yun Yao, Zhiwei Ye, Wanfang Bai, Orest Kochan, Serhii Mokhun*. Time Series Prediction Based on LSTM and Modified Hybrid Breeding Optimization Algorithm

5. *Esra Gündoğan, Mehmet Kaya*. An Article Similarity-based Approach for Planning Conference Sessions
6. *Necip Çınar, Buket Kaya, Mehmet Kaya*. Brain Stroke Detection from CT Images Using Transfer Learning Method

S5: Artificial Intelligence and Cognitive Systems. Block C

Date: Saturday, 23 September

9:00 – 10:30

Session Chairs: Marcin Hernes, Wolfgang Dorner

Location: Zoom 3 / Room 4a

1. *Mohammed Salih Bendella, Badr Benmammar, Francine Krief*. Quality of Service Optimization for Green Cognitive Radio Network: a Comparative Study of Flower Pollination and AHP-TOPSIS Algorithm
2. *Sergiy Gnatiuk, Pylyp Prystavka, Serge Dolgikh, Vasyl Kondratiuk, Oleksandr Kutsenko*. Sparse Generative Embeddings of Handwritten Digits
3. *Abdusamad Nigmatov, Aneesh Pradeep*. The Impact of AI on Business: Opportunities, Risks, and Challenges
4. *Oleksandr Andronati, Svitlana Antoshchuk, Anatolii Nikolenko, Olena Arsirii, Oksana Babilunha, Denys Petrosiuk*. Ensemble Classifiers of Audio Data for Speech Emotions Recognition
5. *Galina Panayotova, Georgi Dimitrov, Willian Dimitrov, Pavel Petrov, Pepa Petrova, Paulina Tsvetkova*. Quantitative Analysis of EEG Signal Profiles
6. *Andriy Melnyk, Andriy Dyvak, Vitaliy Pryvrotskyy, Yuriy Franko, Łukasz Łysik, Volodymyr Shpak*. Information Technology based on an Ontological Approach for Identification of the Recurrent Laryngeal Nerve During Operations on the Neck Organs

S5: Artificial Intelligence and Cognitive Systems. POSTER

Date: Saturday, 23 September

9:00 – 10:30

Session Chairs: Marcin Hernes, Wolfgang Dorner

Location: Hall in Building W

1. *Serhiy Sveleba, Ivan Katerynychuk, Ivan Kunyo, Ostap Semotyjuk, Serhiy Velgosh, Volodymyr Brygilevych*. The Application of Optimization Learning Methods for Multilayered Neural Networks
2. *Andriy Melnyk, Ruslan Shevchuk, Mariya Mudrak, Oksana Huhul, Yevgeniya Martsenyuk, Iurii Shcherbiak*. The Method of Identifying Irrelevant Information in Service-Oriented Corporate Systems
3. *Andriy Melnyk, Roman Pasichnyk, Olexander Androshchuk, Lyudmyla Honchar, Oleh Vatslavskyy, Kozibroda Serhii*. Ontology as a Software Superstructure to the System for Mathematical Modeling based on Interval Data

4. *Yaroslava Pushkarova, Galina Zaitseva, Anastasiia Kaliuzhenko.* Classification of Residual Solvents by Risk Assessment Using Chemometric Methods
5. *Vasyl Faifura, Iryna Spivak, Svitlana Krepych.* Context-Aware Invasive Plant Instance Synthesis for UAV-Based Crop Field Image Augmentation

S6: Information Technology in Education. Block A

Date: Friday, 22 September

14:00 – 15:30

Session Chairs: Wiesława Gryniewicz, Martin Taraj

Location: Zoom 3 / Room 4a

1. *Iurii Shcherbiak, Olha Nahorna, Dmytro Kostenko, Olena Binytska, Tetiana Kochubei, Roman Gakh.* Information Competence Formation of Future Social Workers using Digital Technologies
2. *Dmytro Kostenko, Kateryna Binytska, Iurii Shcherbiak, Jan Beseda, Wojtek Duczmal, Oleksandra Patriak.* The Model of Formation of Intercultural Competence of Future IT Specialists
3. *Serhii Mokhun, Olha Fedchyshyn, Mykhailo Kasianchuk, Pavlo Chopyk, Inna Hrod, Svitlana Leshchuk.* Stellarium Virtual Environment as a Means of Implementing Interdisciplinary Connections during the Study of Astronomy
4. *Valerii Habrusiev, Hryhorii Tereshchuk, Valerii Panchenko, Serhii Martyniuk, Oleksii Sysoiev, Halyna Henseruk.* Enhancing Online Learning in LCM Moodlethrough Interactive Adaptive Learning
5. *Olha Potapchuk, Ihor Hevko, Iryna Lutsyk, Volodymyr Rak, Lesia Hiltay, Roman Monko.* The Use of Immersive Technologies to Implement a Multimodal Approach in the Educational Process
6. *Lesia Dubchak, Nadiia Vasylykiv, Iryna Turchenko, Tetiana Nadvynychna, Nadiia Savka, Amantius Akimjak.* Fuzzy Controller of Evaluation System Access Distribution

S6: Information Technology in Education. POSTER

Date: Saturday, 23 September

9:00 – 10:30

Session Chairs: Iurii Shcherbiak, Martin Taraj

Location: Hall in Building W

1. *Krzysztof Górecki, Kacper Boguń.* Modelling Properties of Batteries using the SPICE Software
2. *Mariia Danyliuk, Marta Dmytryshyn, Tetyana Goran.* Features of Developing an Online Educational Course for Public Officials: Case from Ukraine
3. *Zukhra Kalkabayeva, Manargul Mukasheva, Aizhan Zhanasbayeva.* Development of Virtual and Augmented Reality Applications with Realization Project-based Learning

4. *Manargul Mukasheva, Zukhra Kalkabayeva, Aizhan Zhanasbayeva.* Teachers' Perspectives on the use of Virtual Reality in Collaborative Learning

Meeting of the Board

Saturday, 23 September
Location: Room 3

11:00 – 11:45

Closing Ceremony

Saturday, 23 September
Location: Zoom 2 / Room 4

11:45 – 12:15

Concluding reports of Section Chairs, Conference Summary, Conference Closing

Campus Map

Wroclaw University of Economics and Business
ul. Komandorska 118/120, Building W, 53-345 Wroclaw, Poland

