



16th International Conference on

**APPLICATION of INFORMATION and
COMMUNICATION TECHNOLOGIES**

CONFERENCE PROGRAM

12-14- October 2022

Time Zone: ETD (Eastern Daylight Time) / GMT - 4

PROGRAM AT A GLANCE

12 October 2022

Format: Hybrid / **Location:** GWU (SEH B1270)

Address: 800 22nd St NW, Washington DC

09:00 – 09:30	Registration / Reception
09:30 – 10:00	Opening and Welcoming Addresses
10:00 – 11:00	Keynote Session
11:00 – 11:30	Coffee Break / Networking Session
11:30 – 12:30	Keynote Session
12:30 – 13:30	Lunch
13:30 – 15:30	Concurrent Technical Sessions

13 October 2022

Format: Hybrid / **Location:** GWU (SEH 2990, 2000)

Address: 800 22nd St NW, Washington DC

10:30 – 11:00	Coffee Break / Networking Session
11:00 – 13:00	Concurrent Technical Sessions
13:00 – 14:00	Lunch
14:00 – 16:00	Concurrent Technical Sessions

14 October 2022

Format: Virtual (Zoom) / **Location:** Washington Center of ADA University

Address: 1627 21st Street NW, Washington DC

09:30 – 11:30	Concurrent Technical Sessions
11:30 – 12:00	Coffee Break / Virtual Networking Session
12:00 – 14:00	Concurrent Technical Sessions
14:00 – 14:30	Wrap-up / Closing of AICT2022

AICT2022 International Conference



OCTOBER, 2022

Time Zone: ETD (Eastern Daylight Time) / GMT - 4

Location:

Science and Engineering Hall, room B1270

800 22nd St NW, Washington DC

12 October 2022

Location: SHE, room B1270

For Virtual Participation
VIRTUAL ROOM – 1

09:30–10:00

WELCOMING MESSAGES

Prof. Stephen Kaisler, *AICT2022 Program Chair, George Washington University, US*

Prof. John Lach, *Dean, School of Engineering and Applied Science, George Washington University, US*

Prof. Sencer Yeralan, *Dean, School of IT & Engineering, ADA University, Azerbaijan*

Prof. Paolo Garza, *Department of Control and Computer Engineering, Politecnico di Torino, Italy*

Mr. Bakhtiyar Aslanbeyli, *Vice President for the Caspian region, Communications and External Affairs*

Dr. Abzetdin Adamov, *AICT2022 General Chair / IEEE Azerbaijan Chapter / ADA University, Azerbaijan*

10:00–11:00

KEYNOTE SESSION

Moderator: Prof. Stephen Kaisler

10:00-10:30

Speaker: Professor Tarek El-Ghazawi
IEEE Fellow, Chair of Electrical and Computer Engineering Department, George Washington University, US
Title: Advances in High-Performance Computing

10:30-11:00

Speaker: Professor Marco Mellia
IEEE Fellow, Department of Control and Computer Engineering, Politecnico di Torino, Italy
Title: AI for Network Traffic Analysis. How NLP can help in understanding internet traffic?

11:00–11:30

Coffee Break / Networking Session

11:30–12:30	KEYNOTE SESSION
	<i>Moderator: Prof. Stephen Kaisler</i>
11:30-12:00	<i>Speaker: Mr. Christopher Geiger</i> <i>Internal Audit Director, Lockheed Martin, US</i> <i>Title: Advances in Environmental, Social, and Governance (ESG) Data Analysis and Assurance</i>
12:00-12:30	<i>Speaker: Dr. Javid Huseynov</i> <i>Associate Professor of Applied Analytics, School of Professional Studies, Columbia University, US</i> <i>Title: Data and AI-driven Storytelling</i>
12:30–13:30	Lunch

13:30–15:30**TECHNICAL SESSION****Location: SHE, room B1270**

For Virtual Participation
VIRTUAL ROOM – 1

SESSION 1.**DATA SCIENCE AND ADVANCED ANALYTICS****Location: SEH, room B1270**

Session Chair:

Time: 13:330**Virtual Room 1**
2022007501 An Ontological Approach to the Development of Analytical Platform Language Toolkits

Lyudmila Lyadova, Nikolai Suvorov, Viktor Zayakin, Elena Zamyatina, HSE University, Perm, Russia

2022003253 Corpus approach to research the structure of homovisemes in Russian oral speech and their visual perception

Myasoedova M.A., Eliseev A.V., Myasoedova Z.P., Farkhadov M.P., V. A. Trapeznikov Institute of Control Sciences of RAS, Moscow, Russia

2022006050 A Syntax-based BSGCN Model for Chinese Implicit Sentiment Analysis with Multi-classification

Lifang Fu, Shuai Liu, Northeast Agricultural University, Harbin, China

2022007482 Ontology-Based Development of Domain-Specific Languages via Customizing Base Language

Grigoriy Kulagin, HSE University Perm, Russia; Ivan Ermakov, Perm State University Perm, Russia; Lyudmila Lyadova, HSE University Perm, Russia

2022008667 Event Series Generation and Analysis Based on Multifaceted Ontology

Viktor Zayakin, Lyudmila N. Lyadova, Viacheslav Lanin, Elena Zamyatina, HSE University, Perm, Russia; Mikhail Smirnov, Perm State University, Perm, Russia; Nada Matta, University of Technology of Troyes, Troyes, France

2022000371 Quantitative and Semantic Analysis of Texts in Turkic Languages using Universal Declaration of Human Rights (UDHR).

Abzetdin Z. Adamov, ADA University, Baku, Azerbaijan

AICT2022 International Conference



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Science and Engineering Hall, rooms: 2000, 2990
800 22nd St NW, Washington DC

13 October 2022

10:30–11:00 Coffee Break / Networking Session

11:00–16:00

CONCURRENT TECHNICAL SESSIONS

For Virtual Participation
VIRTUAL ROOM – 1

SESSION 2
HIGH PERFORMANCE COMPUTING

Location: SEH, room 2000

Session Chair:

Time: 11:00–13:00

Virtual Room 1

2022004242 Sign Language Hand Gesture Recognition Method based on Machine Learning

Fargana J. Abdullayeva, Kamala Sh. Gurbanova, Institute of Information Technology of ANAS, Baku, Azerbaijan

2022001455 A Novel Blockchain-Integrated Distributed Data Storage Model with Built-in Load Balancing

Obadah Hammoud, National University of Science and Technology, Moscow, Russia; Ivan A. Tarkhanov, State Academic University for Humanities / Federal Research Center “Computer Science and Control” of Russian Academy of Sciences

2022005938 A Comparative Study of Large Automata Distributed Processing

Cheikh BA, Universit’e Gaston Berger de Saint-Louis, Saint-Louis, Senegal

2022006884 Performance analysis of transfer learning based deep neural networks in Alzheimer classification

Mohammad Jaber Hossain, Juan Luis Nieves, University of Granada, Granada, Spain

2022005111 Benchmarking How Classification Models Deal with High Dimension of Features

Nuno Pombo, Eduardo Paulos, University of Beira Interior, Covilha, Portugal

2022004941 On approaches of investigating multi-layered medical images for implicit features

Jamaladdin Hasanov, ADA University, Baku, Azerbaijan

13:00–14:00 Lunch

SESSION 3.1.**MACHINE LEARNING AND OTHER AI TECHNIQUES****Location:** SEH, room 2990

Session Chair:

Time: 14:00–16:00**Virtual Room 1****2022003569 Analysis of Normal and Pathological Heart Rate Variability Based on Electrocardiogram Data**

Anastasya A. Gusarova, Elena E. Goldenok, Nataly A. Lukyanova, Krasnoyarsk State Medical University named after Professor V.F. Voyno-Yasenetsky, Krasnoyarsk, Russian Federation; Daria V. Semenova, Grigory N. Chernov, Siberian Federal University, Krasnoyarsk, Russian Federation; Nataly V. Mishina, Federal Siberian Research and Clinical Center, Krasnoyarsk, Russian Federation

2022004800 Reinforcement Learning Based Robot Control

Ziyaddin Guliyev, Ali Parsayan, Baku Higher Oil School, Baku, Azerbaijan

2022008520 Time-of-Flight Cameras in Space: Pose Estimation with Deep Learning Methodologies

Alkis Koudounas, Flavio Giobergia, Elena Baralis, Politecnico di Torino, Turin, Italy

2022008047 Improving BERT Classification Performance on Short Queries About UNIX Commands Using an Additional Round of Fine-Tuning on Related Data

Grady McPeak, The George Washington University, Washington DC, USA

2022009696 Network Intrusion Detection using Supervised and Unsupervised Machine Learning

Lala Shahbandayeva, George Washington University, Washington, DC, USA; Ulviyya Mammadzada, Ilaha Manafova, Sevinj Jafarli, Abzetdin Z. Adamov, ADA University, Baku, Azerbaijan

For Virtual Participation VIRTUAL ROOM – 2

SESSION 4.

SIGNAL PROCESSING

Location: SEH, room 2000

Session Chair:

Time: 11:00–13:00

Virtual Room 2

2022000879 Novel method for abstracting synchronization signal using beam pattern recognition for 5G RF repeaters

Kyung-yong Lee, Jae-Seon Jang, Access network technology department kt Seoul, Korea

2022006730 Real-time sleep prediction using a virtual sensor to estimate Heart Rate Variability (HRV) through Respiratory Rate (RR)

Luigi Pugliese, Massimo Violante, Politecnico di Torino, Turin, Italy; Sara Groppo, Sleep Advice Technologies Srl Turin, Italy

2022008241 Discrete Hilbert Transform via Memristor Crossbars for Compact Biosignal Processing

Lei Zhang, Zhuolin Yang, Kedar Aras, Gina C. Adam; George Washington University, Washington DC, USA; Igor R. Efimov, Northwestern University, Evanston IL, USA

2022008470 An Improved Hybrid LDPC Decoder over Rayleigh Fading Channel

Reza Biazaran, Hermann J. Helgert, George Washington University, Washington DC, USA

2022008983 Low Complexity Blind SLM for PAPR reduction of HF XL systems

Junbing Li, Xiaoping Zeng, Congji Yin, Chenxi Bai, Chongqing University, Chongqing, China; Guojun Li, Chongqing University of Posts and Telecommunications, Chongqing, China

13:00–14:00 Lunch

SESSION 5.
EMERGING TRENDS AND TECHNOLOGIES IN ICT
APPLICATION

Location: SEH, room 2990

Session Chair:

Time: 14:00–16:00

Virtual Room 2

<p>2022002293 Turnstile Access based on Facial Recognition and Vaccine Passport Verification <i>Shams Aliyeva, Ali Parsayan, Baku Higher Oil School Baku Higher Oil School, Baku, Azerbaijan</i></p>
<p>2022007221 Developing Voice Chatbot for Learning Maritime English <i>Khlebalov Fedor, Viacheslav Lanin, HSE University, Perm, Russia; Svetlana Strinyuk, Admiral Makarov State University of Maritime and Inland Shipping, Saint Petersburg, Russia</i></p>
<p>2022008314 Genetic Algorithm for RCPSP With Fuzzy NPV <i>Aleksandr M. Bulavchuk, Daria V. Semenova, Siberian Federal University, Krasnoyarsk, Russian Federation</i></p>
<p>2022000741 Algorithms To Increase Data Reliability In Video Transcription <i>Fayzullo Makhmadiyarovich Nazarov, Yarmatov Sherzodjon Shokir ogli, Eshtemirov Bunyod Sherali ogli, Samarkand State University, Samarkand, Uzbekistan</i></p>
<p>2022006244 Age of Information Analysis for Intermittent Updating Through a Gilbert Elliot Erasure Channel <i>Parisa Rafiee, Omur Ozel, George Washington University, Washington DC, USA</i></p>
<p>2022007604 Peer Assessment as an Example of Cooperative Learning Strategies in Graduate and Undergraduate Engineering Courses <i>Amine El Moutaouakil, College of Engineering UAE University Al Ain, United Arab Emirates</i></p>

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Platform:
Zoom Sessions

14 October 2022

In Virtual format

09:30–14:00

CONCURRENT TECHNICAL SESSIONS

VIRTUAL ROOM – 1

SESSION 3.2

MACHINE LEARNING AND OTHER AI TECHNIQUES

Session Chair:

Time: 09:30–11:30

Virtual Room 1

2022003849 Mechanisms for Using Image Properties and Neural Networks in Identification Of Micro-Objects

Isroil I Jumanov, Rustam A Safarov, Olimjon I Djumanov, Samarkand State University, Samarkand, Uzbekistan

2022005899 Multiagent Reinforcement Learning for Integrated Network: Applying to a Part of the Road Network of Krasnoyarsk City

Timofei Tislenko, Daria V. Semenova, Nadezhda V. Kononova, Siberian Federal University, Krasnoyarsk, Russian Federation; Elena E. Goldenok, Krasnoyarsk State Medical University, Krasnoyarsk, Russian Federation; Nataly Sergeeva, Analytics Groups LLC "R.D.Science", Krasnoyarsk, Russian Federation

2022001603 A Memory Efficient Deep Reinforcement Learning Approach For Snake Game Autonomous Agents

Rafat Rahman Tushar, Shahnewaz Siddique, North South University, Dhaka, Bangladesh

2022004552 Artificial Intelligence in Medicine for Chronic Disease Classification Using Machine Learning

Mekhriddin Rakhimov, Ravshanjon Akhmadjonov, Shahzod Javliev, Tashkent University of Information Technologies named after Muhammad Al-Khwarizmi, Tashkent, Uzbekistan

2022002610 A Global Pointer based Entity Relation Extraction Method for Chinese Pulmonary Nodule Medical Records

Tao Shuheng, Chen Yi, Shanghai Institution of Computing Technology, Shanghai, China; Wang Jiping, Shanghai Polytechnic University, Shanghai, China

11:30–12:00 Break / Virtual Networking Session

SESSION 6. COMMUNICATION, NETWORK AND HARDWARE

Session Chair:

Time: 12:00–14:00

Virtual Room 1

<p>2022003109 CovScan: Smart non-contact IR-Temperature scanning and online database system integrated with RFID authentication <i>Ghulam Hyder Palli, Badar Muneer, Bhawani Shankar Chowdhry, Faisal karim Shaikh, Mehran University of Engineering & Technology Jamshoro, Sindh, Pakistan</i></p>
<p>2022004772 Interference Resistant Position Awareness for Collision Avoidance in Dense Drones Swarming <i>Syed Hussain Ali Kazmi, Faizan Qamar, Rosilah Hassan, Universiti Kebangsaan Malaysia, Selangor, Malaysia; Kashif Nisar, University Malaysia Sabah, Sabah, Malaysia</i></p>
<p>2022001214 Hardware Acceleration of FIR Filter Implementation on ZYNQ SoC <i>Guner TATAR, Fatih Sultan Mehmet Vakıf University; Salih BAYAR, Marmara University, Istanbul, Turkey; Ihsan CICEK, Gebze Technical University, Kocaeli, Turkey</i></p>
<p>2022001990 Proactive Computer Network Monitoring based on Homogeneous LSTM Ensemble <i>Ramiz Shikhaliyev, Institute of Information Technology Azerbaijan National Academy of Sciences, Baku, Azerbaijan</i></p>
<p>2022005241 Anomaly Detection in Cyber-Physical Systems based on BiGRU-VAE <i>Rasim Alguliyev, Lyudmila Sukhostat, Aykhan Mammadov, Institute of Information Technology of Azerbaijan National Academy of Sciences, Baku, Azerbaijan</i></p>

VIRTUAL ROOM – 2

SESSION 7.

ICT IN EDUCATION, BUSINESS ADMINISTRATION, GOVERNANCE AND FINANCE

Session Chair:

Time: 09:30–11:30

Virtual Room 2

2022002862 Application of Information Technologies for Solving Economic Problems: In-depth Analysis of Okun’s Law for Azerbaijan

Wadim Strielkowski, University of California, Berkeley, United States; Aida Guliyeva, Ulviyya Rzayeva, Aynur Jabbarova, Azerbaijan State University of Economics, Baku, Azerbaijan

2022000502 Simulation Model in Real-Time Application for Emergency Response Management System using Genetic Algorithm

Jefferson A. Costales, Michael F. Tanaya, Eulogio “Amang” Rodriguez Institute of Science and Technology, Manila, Philippines

2022003078 A Business Recommender System Based on Zones and Commercial Data

Mai Abusair, Rania Dameh, Ruba Egbaria, Salsabeel Alzaqa, An-Najah National University, Palestine

2022007708 Applying Deep Learning in Forecasting Stock Index: Evidence from RTS Index

Fuzuli Aliyev, ADA University, Baku, Azerbaijan; Neman Eylasov, Kutahya Dumlupinar University, Kutahya, Türkiye; Nijat Gasim, Dokuz Eylül University, Izmir, Türkiye

2022007870 A risk-aware approach to stock portfolio allocation based on Deep Q-Networks

Jacopo Fior, Luca Cagliero, Politenico di Torino, Turin, Italy

11:30–12:00 Break / Virtual Networking Session

SESSION 8. ICT IN MEDICINE AND HEALTH CARE

Session Chair:

Time: 12:00–14:00

Virtual Room 2

<p>2022003625 Advantages of Redis in-memory database to efficiently search for healthcare medical supplies using geospatial data <i>Gulara Muradova, Mehran Hematyar, Azerbaijan Technical University, Baku, Azerbaijan; Jala Jamalova, Azerbaijan State Oil and Industry University Baku, Azerbaijan</i></p>
<p>2022006152 Prediction of hepatocellular carcinoma using a machine learning algorithm <i>Masuma Mammadova, Zarifa Jabrayilova, Lala Karayeva, Aytan Ahmadova, Institute of Information Technology of Azerbaijan National Academy of Science, Baku, Azerbaijan</i></p>
<p>2022006543 Automated detection of myocardial infarction using ECG-based artificial intelligence models: a systematic review <i>Pedro Segura-Saldana, Frank Britto-Bisso, David Villaseca Pacheco, Ana Lucia Manrique, Gisella M. Bejarano Nicho, Universidad Peruana Cayetano Heredia, Lima, Peru; Mayita L. Alvarez-Vargas, Torres de Salud National Research Center, Lima, Peru</i></p>
<p>2022004397 Empowering Diabetes Patients by Providing Machine Learning-Driven Predictions and Personalized Visualization Results <i>Ankit Gupta, Nada Basit, University of Virginia, Charlottesville, Virginia</i></p>
<p>2022006394 Formation of Unified Digital Health Information Space in Healthcare 4.0 Environment and interoperability issues <i>Masuma Mammadova, Aytan Ahmadova, Institute of Information Technology of Azerbaijan National Academy of Science, Baku, Azerbaijan</i></p>
<p>2022002574 Information Extraction from Arabic Medications Leaflets <i>Adnan Yahya, Hala Salameh, Maram Belbeisi, Noor Shamasneh, Birzeit University, Birzeit, Palestine</i></p>

VIRTUAL ROOM – 1

14:00–14:30	WRAP-UP / CLOSING OF AICT2022
	VIRTUAL GROUP PHOTO (with open cameras)