

GEORGIAN TECHNICAL UNIVERSITY

DRESDEN UNIVERSITY OF APPLIED SCIENCES - GERMANY

International Scientific-Practical Conference
MODERN CHALLENGES AND ACHIEVEMENTS
IN INFORMATION AND COMMUNICATION TECHNOLOGIES - 2023

PROGRAM



12-13 OCTOBER, 2023
TBILISI, GEORGIA

Conference regulations:

The plenary session will take place on October 12, 2023, at 11:00 a.m, in the Administrative building of GTU, in the hall named after Giorgi Nikoladze

Registration: 10:00 Am

To attend the opening of the conference "online", please visit the Link

<https://zoom.us/j/8689180935?pwd=aCtVa1Zlb3FsWXBZNiNiSmpWZk9LZz09>

ID: 868 918 0935

Password: gtu2020

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Opening of the Conference - October 12, 11:00 am

Greetings:



Rector of Georgia Technical University, Professor David Gurgenidze



Dean of the Faculty of Informatics and Control Systems, GTU, Professor Tamar Lominadze



HTW Professor at the University of Applied Sciences Dresden, Germany Professor Mario Neugebauer



Dean of the Faculty Informatic/Mathematic HTW Dresden, Germany Professor Torsten Munkelt



International Cooperation Department Kazakh American Free University Professor Serik Abilov



President of Israel's Bar-Ilan University Mr. Zohar Inon



Kyrgyzstan State Technical University Professor Cholpon Sydykova



University of Debrecen (Hungary) Professor Janosz Stryk



Wildau University of Applied Sciences (Germany) Professor Michael Müller

Invited guests

Sections working time 12:30 – 18:00

I - SECTION: MODERN TRENDS IN INFORMATION TECHNOLOGIES

The section will operate during the meetings of the Jules Shartava Laboratory at GTU in Room N410 (located in the ninth building of GTU).

Guidelines for the presentations: Maximum of 10 minutes for the report, by a 5-minute for discussion

Zoom ID: 868 918 0935

Password: gtu2020

Link: <https://zoom.us/j/8689180935?pwd=aCtVa1Zlb3FsWXBZNIiSmpWZk9LZz09>

Chairman: Professor Mario Neugebauer, Professor Lily Petriashvili

Co- Chairman: Professor Mzia Kiknadze

Professor Medea Tevdoradze

Professor Zviad Gurtskaia

Professor Ioseb Kartvelishvili

Assoc. Professor Mikheil Chikhradze

1. **Mario Neugebauer** - How to start a Start-up
2. **Tengiz Bakhtadze, Irakli Rodonaia, Vakhtang Rodonaia** - Multiagent Decision Processes in Supply Chain Risk Management
3. **J'Anos Sztrik** - Teaching Queueing theory Based on Digital Technologies
4. **Japarov Marat** - The role of information technology in the contemporary digital world
5. **Alexander Sharmazanashvili, Salome Vashakidze** - Development of the Simulation Tool for the Radiation Length in the HEP Experiments
6. **Ekaterine Papava, Tamar Lominadze, Zurab Bosikashvili** - Designing an NLP-Powered SEO API for Georgian Language
7. **Ilia Mosashvili** - Real-time identification and tracking system using RFID technology
8. **Medea Tevdoradze, Nino Lolashvili, Samson Darchia** - Cloud software systems architecture for the selection
9. **Lily Petriashvili, Kai Noibach** - The Impact of Big Data Analytics and AI in Controlling and Controller Functions
10. **Nona Otkhozoria, Ani Kudukhashvili** - Python in Real Time Systems

Lunch break 14:30 – 15:00

11. **Didmanidze Ibraim, Zaslavski Vladimir, Thkhilaishvili Rima** - Raising security of information systems
12. **Medea Tevdoradze, Ia Giashvili, Tamar Asatiani** - Impact of data warehouses on BI-systems and business effectiveness
13. **Nugzar Kochiashvili, Ioseb Kartvelishvili** - Datacenter Modern Challenges
14. **Irina Khomeriki, Ani Kudukhashvili** - Blockchain and its Role in the Internet of Things (IoT), challenges, opportunities
15. **Nodar Lominadze, Rusudan Papiashvili** - Tendencies of Increasing Security of Information Transmission Models
16. **Levani Julakidze, Zurabi Kochladze, Tinatini Kaishauri** - Ability to Build a New Cryptographic Algorithm
17. **Sulkhan Khutsishvili, Zurab Gasitashvili, Maka Khartishvili** - Analysis of the Main Approaches to the Formation of An Innovative Business Model

18. **Ioseb Kartvelishvili, Maia Okhanashvili, Nino Chorkhauri** - Review and Analysis of Existing Methods for Detecting Network Attacks
19. **Medea Tevdoradze, Nino Ghudushauri, Nino Melikidze** - development of the organization's IT strategy
20. **Tamaz Gigilashvili, Giorgi Gigilashvili, Irine Gotsiridze** - Microsoft Excel application for implementation of AHP method
21. **Nino Khaindrava** - Use of digital tools in the management of educational processes
22. **Nino Grigalashvili** - The impact of artificial intelligence tools on the economy

II - SECTION: COMMUNICATION, NETWORKS AND HARDWARE DEDICATED TO THE MEMORY OF PROFESSOR NODAR KHARATISHVILI

The section will operate during the meetings in the eighth building of GTU in the room 502 and 504

Guidelines for the presentations: Maximum of 10 minutes for the report, by a 5-minute for discussion

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Link: <https://zoom.us/j/8689180935?pwd=aCtVa1Zlb3FsWXBZNIiSmpWZk9LZz09>

Chairman: Professor Sergo Shavgulidze, Professor Pridon Indjia

Co-Chairman: Professor Marina Kurdadze,
Professor Omar Shamanadze

1. **Sergo Shavgulidze, Nodar Ugrelidze, Mamuka Ckhaidze** - Next-Generation Satellite Communication Networks
2. **Omar Shamanadze, Omar Tkeshelashvili, Temur Berianidze** - Measuring YouTube's Quality of Experience (QoE) With Network and Application-Level (QoS) Parameters
3. **Marina Kurdadze, Gedevan Murjikneli, Giorgi Murjikneli** - Reliability Calculation Algorithm in Telecommunication Systems with Proposed Criteria
4. **Nikoloz Bzhilava** - Problems of Separating Subscribers From Each Other in a Virtual Local Network and the ir Solution Using a Private VLAN
5. **Manana Gogberashvili, Vakhtang Abuladze, Janiko Khuntsaria** - Algorithm of Adaptive Coding of Digital Pictures
6. **Anna Jikia, Isolda Kurashvili, Marina Kurdadze** - Classification of Economic Parameters and Data Among the Functional Blocks of the Telecommunications Management System
7. **Salome Makharadze, Tatiana Burkadze, Elvira Bzhinava** - Impact of 5th Generation (5g) Mobile Networks' Radiation on Human Health
8. **Tatiana Burkadze, Salome Makharadze** - A Cellular Network, Wi-Fi Network and Li-Fi Network

Lunch break 14:30 – 15:00

9. **Givi Murjikneli, Kote Begiashvili** - Evaluation of the Quality Indicators of Mobile Connection Based on the Use of Artificial Intelligence Methods

10. **Viktor Nanobashvili, Janiko Khuntsaria, Vakhtang Abuladze** - Error Detection Issues in MILLER-Type Linear Code
11. **Mzia Kiknadze, Ivane Makasarashvili, Ekaterine Gvaramia** - Digital Reconstruction System
12. **Iuri Modebadze, Vakhtang Abuladze, Guram Murjikneli** - FWM When Propagating Four Waves in An Optical Fiber Investigation of the Effect Using the LabVIEW Program
13. **Revaz Svanidze, Mamuka Chkhaidze, Vakhtangi Abuladze** - Determination of the Optimal Threshold Value of the Decision Device of a Digital Fiber-Optic Transmission System (DFTS)
14. **Niko Sul Khanishvili, Revaz Svanidze, Vakhtang Abuladze** - Modern Mathematical Method of Signal Processing Using MATLAB
15. **Ilia Bajelidze, Givi Murjikneli** - Optimizing the Mobility Process Using a Centralized Management Method of Grouping User Terminals and the ir Handovers
16. **Nino Zhizhilashvili, Lia Rukhadze** - Key Developments and Challenges in the Telecommunications Landscape of Georgia Regarding 5G Technologies.

III - SECTION: ARTIFICIAL INTELLIGENCE - CHALLENGES AND OPPORTUNITIES CYBER-MEDICINE

The section will operate during the meetings of the Jules Shartava Laboratory at GTU in room N405 (located in the ninth building of GTU).

Guidelines for the presentations: Maximum of 10 minutes for the report, by a 5-minute for discussion

Zoom ID: 868 918 0935

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Chairman: Professor Mariam Chkhaidze, Professor Zurab Bosikashvili

Co-Chairman: Assoc.Professor Otar Tavdishvili

Assoc.Professor Sopo Barnovi

1. **Aleksi Kobaidze, Mariam Chkhaidze** - The role of Machine Learning and Artificial Intelligence in Mobile Application development
2. **Zurab Bosikashvili, Tamar Bosikashvili, Ketevan Bosikashvili** - Using Blocking Meta-Heuristics in the Models of Deep Learning
3. **Tamaz Sulaberidze, Otar Tavdishvili, Zurab Alimbarashvili** - Digital Image Enlarging Using the Generalized Interpolation Formulae
4. **Maia Mikeladze, Nora Jaliabova, Natela Ananiashvili** - Application of Artificial Intelligence Methods in Treatment Management of Rare Diseases
5. **Tamar Lominadze, Sofiko, Gogoladze, Lela Papava** - Artificial intelligence technologies in the "smart" classroom
6. **Parnavaz Tkemaladze, Lily Petriashvili** - Classified algorithm for determining the accuracy of face recognition
7. **Ana Gergauli, Medea Tevdoradze, Maya Saltkhutsishvili** - The use of artificial neural networks in human resource evaluation issues

Lunch break 14:30 – 15:00

8. **Mzia Kiknadze, Zurab Gasitashvili, Nana Nozadze** - Analysis of factors affecting the sustainable development of the region with artificial intelligence
9. **Magda Beruashvili** - Artificial intelligence and justice - opportunities and challenges
10. **Mirandi Gvaladze** - Reconstruction of Archeological Artifacts Using Artificial Intelligence
11. **Vadim Radzievski, Ilia Okonian, Dimitri Radzievski** - An Intelligent Support System Model for Solving Medical Diagnostic and Treatment Tasks
12. **Nino Topuria, Shalva Zakalashvili, Marina Kashibadze** - Document Processing Through Artificial Intelligence Models
13. **Inga Abuladze, Nana Maglakelidze, Sandro Iashvili** - The role of artificial intelligence in education
14. **Zurab Bosikashvili, Giorgi Kvartskhava, Merab Machavariani** - Identification and Analyses of Tree Species Using Uav Images of Forests and Deep Machine Learning Models
15. **Avtandili Bichnigauri, Ioseb Kartvelishvili, Luka Shonia** - Development and Implementation of an Effective Mechanism Model for Preventing Phishing and Malicious Code Websites Using the Web Browser Environment
16. **Otar Shonia, Sofio Shinjikashvili, Avtandili Bichnigauri** - Study of Threats of 6G Computer Networks from the Point of View of Cyber Security
17. **Davit Satsradze** - Overview of artificial intelligence platforms and their development prospects
18. **Nona Ochtozoria, Natia Kukhilava** - Emotion recognition in smart cities using IoT
19. **Natalia Gabashvili, Tamar Gabashvili** - Modern technologies for monitoring and sustainable forest management

IV - SECTION: THE INFORMATION SOCIETY

The section will operate during the meetings of the Jules Shartava Laboratory at GTU in room N406 (located in the ninth building of GTU).

Guidelines for the presentations: Maximum of 10 minutes for the report, by a 5-minute for discussion

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Link: <https://zoom.us/j/8689180935?pwd=aCtVa1Zlb3FsWXBZNIiSmpWZk9LZz09>

Chairman: Professor Gia Surguladze, Professor Taliko Zhvania

Co-Chairman: Professor Levan Imnaishvili
 Professor David Kapanadze
 Professor Badri Meparishvili
 Asoc.Professor Nino Topuria
 Asoc.Professor Inga Abuladze

1. **Gia Surguladze, Sofiko Papavadze, Gulbaat Nareshelashvili** - Information Society and Unified Modeling of the Educational Process
2. **Merab Pkhovelishvili, Zaza Tsiramua, Natela Archvadze** - A New Multifactor Forecasting Algorithm

3. **Levan Imnaishvili, Maguli Bedineishvili, Archil Chovelidze** - About One Technology for Sharing Laboratory Resources by Educational Institutions of Engineering Profile
4. **George Tandilashvili, David Kapanadze, Taliko Zhvania** - Classification Aspects of E-Learning Personalization
5. **Badri Meparishvili, Gulnara Djanelidze, Irakli Khachidze** - Some New Aspects of Knowledge Engineering
6. **Bejanishvili Lolita, Nachkebia Mziana** - Risk Forecasting in the Process of Software Project Development
7. **Olgha Khutsishvili, Tea Khutsishvili, Irma Kutsia** - Aspects and challenges of digital literacy
8. **Gela Ghvinepadze, Nino Chorkhauri** - Some News About Training in the Web Technologies

Lunch break 14:30 – 15:00

9. **Emeliane Gogilidze, Natia Gogilidze** - The Impact of Modern Information and Communication Technologies on the Formation of Society
10. **Otari Machaladze** - Information Society and ICT Challenges Effectively Management Based on Jira Technology
11. **Nugzar Amilakhvari, Gia Surguladze** - Peculiarities of the Development of Databases of the Company's Management System
12. **Nino Jojua, Ekaterine Bochoridze, Nino Tsiklauri** - Mobile applications and peculiarities of their creation considering the platforms
13. **Lali Gochitashvili, Tornike Davali, Ia Aptsiauri** - Use and usefulness of Internet technologies in the economy

V - SECTION: CONTROL SYSTEMS, AUTOMATION AND TEST-ENGINEERING

The section will operate during the meetings of the Jules Shartava Laboratory at GTU in room N406 (located in the ninth building of GTU).

Guidelines for the presentations: Maximum of 10 minutes for the report, by a 5-minute for discussion

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Chairman: Professor Nona Otkhozoria, Professor TKetevan Kotrikadze

Co-Chairman: Professor Zaal Azmaiparashvili
 Professor Besarion Shanshiashvili
 Asoc. Professor Lela Gachechiladze

1. **Zaal Azmaiparashvili, Guram Murjikneli, Lado Sekhniashvili** - Microprocessor measuring system with optical channels for receiving primary information
2. **Ana Pitskhelauri, Irine Gotsiridze** - The Results of In-vivo Dosimetry Among Brachytherapy Patients 2018-2022
3. **Nino Mchedlishvili, Nodar Narimanashvili** - Modeling of Spatially Distributed Control Objects Using the PDE Toolbox Package
4. **Besarion Shanshiashvili** - Identification Of Closed-Loop Nonlinear Systems Using

5. **Lela Gachechiladze, Ana Margvelashvili** - Development of a Smartphone Selection Algorithm Based on the Hierarchy Analysis Method
6. **Tamaz Minashvili, Giorgi Iluridze, Ketevan Davitadze** - Interface Modification and Optical Properties of the Au/InAs UAV Images (100) Structures Upon Heating
7. **Sharashenidze Nika, Menabde Tamari** - ways and means of improving the use of resources in real-time distributed embedded systems
8. **Nodari Abelashvili, Malkhaz Babuashvili** - Comparative Analysis of Determination of Quantitative Indicators of Glucose Using Different Equipment Methods
9. **Mariam Tsiklauri, Giorgi Sarishvili** - Human Vital Signs Monitoring System
10. **Alexander Benashvili, Eka Gvaramia** - On the Issue of Choosing a Processor for a Computer System

Lunch break 14:30 – 15:00

11. **Nika Beridze** - Development of a Sun Tracking System
12. **Ketevan Kotrikadze, Nana Kurkumuli** - Robust Control and Some of Its Aspects
13. **Marek Mazanashvili, Shorena Dekanisidze** - From Thermocouples to IR Sensors: A Journey in Temperature Sensing Technologies
14. **Irina Chkheidze, Medea Narchemashvili, Niko Abzianidze** - Discussion of uncertainty of measurement results of time-varying processes based on fractal methods
15. **Vano Otkhazia, Eka Akhlouri** - Fractal classification of complex signals
16. **Aleksandre Labadze, Zviad Ghurtskaia** - Diabetic Retinopathy Classification Using Hybrid Deep Learning Method
17. **Kitaevich Mikheil** - Automatic Classification of Pulmonary Data Recorded in Real-Life Setting
18. **Irma Davitashvili** - Modeling and managing balance on a ball pole
19. **Olgha Khutsishvili, Tea Khutsishvili, Malkhaz Sulashvili** - Applied aspects of Nater's theorem in optimal control theory
20. **Valida Sesadze, Gela Chikadze** - Information in large systems Assessment of security risk situation using probabilistic

13 October - 10:00

The section will operate during the meetings of the Jules Shartava Laboratory at GTU in room N406 (located in the ninth building of GTU).

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16:00 Closing of the Conference (Online)

(Feedback discussion on Conference)