International Conference on Systems and Technologies of Digital HealthCare

(STDH-2026)

CONFERENCE PROGRAM

September 23-25, 2026

2026 INTERNATIONAL CONFERENCE ON SYSTEMS AND TECHNOLOGIES OF DIGITAL HEALTHCARE
(STDH - 2026)
September 23 – 25, 2026

МЕЖДУНАРОДНАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ
«СИСТЕМЫ И ТЕХНОЛОГИИ ЦИФРОВОЙ МЕДИЦИНЫ»
(STDH-2026)
23 – 25 сентября 2026

Conference Program
Программа конференции

Venue: **Islam Karimov Tashkent State Technical University,**
address: 2 Universitet St, Uzbekistan, Tashkent,

Saint Petersburg Electrotechnical University "LETI",
address: Prof. Popov str. 5, Saint Petersburg, 197022, Russia

23.09.2026

9:30-10:00 **Registration of conference participants**
Регистрация участников конференции

10:00 **Conference opening**
Открытие конференции
Ссылка на подключение https://telemost.yandex.ru/j/32033583596183
Online connection https://telemost.yandex.ru/j/32033583596183

Conference Hall: Uzbekistan-Japan youth innovation center
Конференц-зал: Узбекско-японский молодежный инновационный центр

10:00-10:30 **Welcome from:**
Приветственное слово:

Турабджанов С.М. действительный член Академии наук Республики Узбекистан, д.т.н., профессор, ректор Ташкентского государственного технического университета имени Ислама Каримова

Шелудько В.Н. д.т.н., профессор, ректор Санкт-Петербургского государственного электротехнического университета «ЛЭТИ», Почетный работник высшего профессионального образования РФ

Аллаев К.Р., действительный член Академии наук Республики Узбекистан, д.т.н., профессор Заслуженный наставник молодежи Республики Узбекистана

«Информация о III международной научной конференции STDH-2026»
Юлдашев З.М., Почетный работник высшего профессионального образования РФ, д.т.н., профессор, председатель программного комитета STDH - 2026

10:30-12:00 – Plenary Session
Пленарное заседание

Нуриллаева Н. М, **доктор мед. наук, профессор, зав. кафедрой внутренних болезней, Ташкентского государственного медицинского университета.**

Абдумаликова Ф.Б. **доктор мед. наук, доцент кафедры внутренних болезней Ташкентского государственного медицинского университета.**

Нейросетевая система комплексного анализа биомедицинских сигналов для ранней диагностики внутренних болезней

Марков А.Г., **ведущий научный сотрудник дизайн центра гибкой биоэлектроники, доктор наук, доцент института бионических технологий и инжиниринга первого московского государственного медицинского университета**

От импульса к движению: как нейроинтерфейсы меняют взаимодействие между мозгом и телом

13:00-14:00 – Lunch Break

Section 1 – Methods of Biomedical Data, Signals, and Image Processing and Analysis

Секция 1 – Методы обработки и анализа биомедицинских данных, сигналов и изображений

23.09.2026
14:00-17:30
Conference Hall: Uzbekistan-Japan youth innovation center

Online connection https://telemost.yandex.ru/j/32033583596183

1. Neuromorphic Methods of Processing IR Images of the Vascular Network of the Hand for Biometric Purposes
   Antsiperov Viacheslav, Kershner Vladislav, Egorov Dobroslav, Mizinov Pavel
2. Leakage-Free EfficientNetV2-L Classification of Alzheimer's Disease Stages from Structural Magnetic Resonance Imaging with Five-Fold Cross-Validation
   Attia Karim S., Hasan Bou Issa Housam, Yuldashev Zafar M.
3. Segmentation of Vascular Structures in Medical Images Using Anisotropic Fuzzy Local Convolution
   Averkin Alexey N., Trofimov Yuri V., Lebedev Mikhail D., Lebedev Alexander D., Ilyin Andrey S.
4. Self-Supervised Generation of Digital MRI Phantoms Using the MR-Zero Simulator
   Belousova Kseniya, Badrieva Zilya, Ekaterina Brui, Al-Haidri Walid
5. Application of a Structured Light Camera to Assess Human Motor Activity During Sleep
   Filippov Timofey, Kublanov Vladimir
6. Comparative Analysis of Image Reconstruction Methods in Electrical Impedance Tomography for Biomedical Applications
   Genina Ekaterina, Akkanen Artem, Zakharchenko Yaroslav, Briko Andrey
7. Models of Visual Attention in the Analysis of Endoscopic Ultrasound Images of the Pancreas
   Gevorkyan Tigran G., Filist Sergei A., Kondrashov Dmitry S., Korobkov Sergey V., Zhilin Ilya A.
8. Early Diagnostics of Human Skin Neoplasms by Means of Multispectral Processing of Images
   Gurevich Boris, Kordyukova Anna, Shevyakov Daniil
9. Optimization of Data Representation for Hybrid Neural Network Classification of Ultra-High Resolution Electrocardiosignals in Early Myocardial Ischemia Detection
   Gurevich Boris, Afanasenko Arseniy, Denisova Elena, Shevyakov Daniil, Kordyukova Anna
10. A Multi-frame Ultrasound Tracking Algorithm for Long-Duration Vertebral Motion
    Hasan Bou Issa Housam, Yuldashev Zafar M., Sali Salar

24.09.2026
10:00-12:00
Conference Hall: Uzbekistan-Japan youth innovation center

Online connection https://telemost.yandex.ru/j/32033583596183

1. An Algorithm for Automated Extraction and Analysis of Reflective Marker Trajectories to Assess the Interaction Characteristics of Vertebrae During Walking
   Ibrahim Anagheem
2. Investigation of Ultrasound-Assistant Electrode Placement Effects on Gesture Recognition in Multimodal EMG/EIM Systems
   Kapravchuk Vladislava, Strebkov Oleg, Zotkina Anna, Briko Andrey, Balashov Maxim, Sintsov Mikhail
3. Evaluating Pretrained Vision Transformers for Spatial Gene Expression Prediction from H&E Histology
   Kardoussi Chamel Baha Eddine, Heddoud Hocine Islem
4. Software and Algorithmic Complex for Cuffless Arterial Pressure Monitoring Based on Synchronous Recording of Local Pulse Wave Velocity and Arterial Diameter Changes
   Khomyakova Anastasia, Yangirov Marat A., Al-harosh Mugeb
5. Signal Processing Issues in a Multielectrode Electrocardiographic System
   Kramm Mikhail N., Bodin Oleg N., Bodin Andrey Yu., Truong Thi Lan Nhi, Rakhmatullov Ruslan F., Rakhmatullov Fagim K.
6. Experimental Evaluation of a Three-Temperature Thermometric System for Transient Tissue Cooling Analysis
   Lomonos Aleksey, Malikova Alina, Briko Andrey, Stepanov Maksim, Akselrod Boris
7. Methodology for Constructing an Integrated Structure for Processing, Analysis and Classification of Biomedical Lung Images Based on the Architecture of a Convolutional Neural Network
   Magrupov Talat, Magrupova Maloxat, Abdihalikov Seit, Hakkulov Maruf, Yusupova, Nodirakhon Gaibnazarov Boburjon
8. Preliminary Studies of the Body's Response to Low-frequency Electromagnetic Therapy
   Malakhov Artem, Lomonos Aleksey, Malikova Alina, Kapravchuk Vladislava, Nabatov Ivan, Hammoud Ahmad

12:00-12:15 – Coffee Break

12:15-14:00

9. Prediction of Sudden Cardiac Death by Entropic Heart Rate Indicators
   Manilo Lyudmila A., Mekhonoshina Anna A., Nemirko Anatoly P., Yuldashev Zafar M., Stepanov Danila A.
10. Optical Sensor for Non-invasive Monitoring of Hematocrit During Hemodialysis
    Mikhailis Milana, Korneeva Inna, Bokhovko Igor, Ovsyannikov Nikolay, Konoplev Georgii, Stepanova Oksana
11. Methods for Measuring Information Parameters of the Functional State of the Human Body
    Mishina Kristina D., Zhigachev Vasily M., Ignashkin Dmitry S., Martinov Dmitry V., Bezborodova Oksana E., Bodin Oleg N.
12. Deep Learning-based Ovarian Cyst Segmentation in Ultrasound Images using Improved U-Net Architecture
    Musaev Muhammadjon M., Rakhimov Mekhriddin, Karimberdiyev Jakhongir, Shamsieva Lorida
13. Drowning Site Determination Based on Instance Segmentation of Diatoms and Bag of Features
    Nedugov Vladimir G., Ilyasova Natalya Yu., Nedugov German V., Demin Nikita S., Gallyamov Edgar R.
14. Template Matching Approach for the Automatic Detection of EEG Absence Epileptic Seizures of WAG/Rij Rats
    Obukhov Yury, Gabova Alexandra, Kershner Ivan, Sarkisova Karine
15. Method for Automatic Determination and Labeling of Gait Cycle Phases Based on Inertial Measurement Units Data
    Petrov Maxim, Akkanen Artem, Briko Andrey

14:00-15:00 – Lunch Break

15:00-17:15

16. A Comparative Study of Optimized VGG16 for Multi-Class Brain Tumor Classification in MRI
Rehmat Nadeem, Ibrahim Anagheem

17. Development of a Method for Selecting Shock Wave Exposure Parameters Based on the Analysis of Physico-Mechanical Characteristics of Kidney Stone Phantoms
Sergeev Igor K., Ermakov Pavel Y., Zhdankin Ivan D., Eisenstadt Semen D.

18. Anatomically Correct Segmentation of Ultra-High Resolution Electrocardiosignals Using Continuous Wavelet Transform
Shevyakov Daniil, Afanasenko Arseniy, Gurevich Boris, Kordyukova Anna, Denisova Elena

19. Electrical Impedance Method for Determining the Electrical Properties of the Skin–Fat Layer
Shikh Maksim, Kobelev Alexander, Shchukin Sergey

20. AI-Based Human Motion Analysis for Sports Medicine and Rehabilitation
Shukurov Kamoliddin, Kholdorov Shokhrukhmirzo, Ismoilova Gulnora, Nigora Elbobo qizi, Shaislamova Muazzamkhon

21. Nonlinear, Spectral, and Asymmetry-Based Analysis of Electrooculographic Signals for Differential Diagnostics of Parkinson's Disease and Essential Tremor
Vinarsky Alexander A., Sushkova Olga S., Morozov Alexei A., Vasilega Anastasia M., Chigaleichick Larisa A., Poleshchuk Vsevolod V., Karabanov Alexei V.

22. Forearm Tissues Resistivity Evaluation During Isometric Muscle Contraction
Yagodkina Anastasia, Kobelev Alexander, Shchukin Sergey

23. Numerical Assessment of the Influence of the Shoulder's Anatomical Structure and Arterial Vessel Architecture on Electrical Impedance
Yangirov Marat A., Khomyakova Anastasia, Al-harosh Mugeeb

24. Decomposition of Surface Thoracic Impedance to Partial Impedances of Internal Tissues
Zakharchenko Yaroslav, Tikhomirov Alexey N., Plytkivich Georgii, Kalmykov Nikolai

Section 2 – Medical Devices, Systems and Complexes for Diagnostics, Monitoring, Treatment, and Rehabilitation

Секция 2 – Медицинские устройства, системы и комплексы для диагностики, мониторинга, лечения и реабилитации

24.09.2026
10:00-12:00
Room 624, Main Building, TSTU

Online connection https://telemost.yandex.ru/j/03488923043564

1. Biotechnical System for Automated Assessment of the Preservation of the Visual Function of the Body in Early Diagnosis of Multiple Sclerosis
Bolsunov Konstantin N., Gapanenok Alexandra E.

2. Automatic Method for Segmentation of Tomographic Phase Contrast Images
Chukalina Marina V., Arlazarov Vladimir V., Bukreeva Inna, Koliaskin Leonid Yu., Karyakina Varvara A., Nikolaev Dmitrii P.

3. Simulation of Gas Exchange in the Biotechnical System “Subject – Self-contained Self-rescue (SCSR) Device”
Dyachenko Alexander, Ermolaev Eugene, Shulagin Yury, Zaripov Rustam, Pogonin Vasily

4. Multimodal Analysis of Objective Markers of Human Functional State for Diagnosis of Simulator Sickness in Virtual Reality
   Gnevashev Yuriy V., Zasypkina Elena Y., Khmeleva Viktoria S., Strelkov Mikhail Y., Petrenko Timur S., Borisov Vasilii I.

5. Prototype Optical System for Continuous Monitoring of Postoperative Haematuria: Bench Development and Pilot Validation
   Gritskov Igor O., Kasian Gevorg R., Pushkarev Alexander V., Pushkar Dmitry Yu.

6. A Method and System for Quantifying Vertebral Displacement Across Gait Phases Under Variable External Loads
   Ibrahim Anagheem

7. Intelligent Humidity Control System for a Neonatal Incubator Based on Fuzzy Logic
   Khan Svetlana, Kashitsyna Anastassiya

8. Development of Tools for Recording Micropotential Electrocardiogram Signals
   Klypin Dmitrii N., Gebel Elena S.

12:00-12:15 – Coffee Break

12:15-14:00

9. Structure of a Wearable Prosthetic Load Monitoring and Feedback System
   Kurochkin Aleksei, Yuldashev Zafar M.

10. Influence of Intermittent Hypoxic Training on the Parameters of Microcirculatory-Tissue Systems
    Loktionova Yulia I., Zharkikh Elena V., Ososkov Vitaly S., Fedorovich Andrey A., Korolev Andrei I., Samatova Kamila S., Sidorov Victor V., Dunaev Andrey V.

11. Automated Diagnosis and Adaptive Correction of Speech Disorders in Uzbek-Speaking Preschool Children
    Musaev Muhammadjon M., Abdullayeva Malika I., Ochilov Mannon M., Karimova Maftuna B.

12. Development of an Algorithm for the Formation of a Pattern of Functional Stimulation in Drop Foot Syndrome
    Oleynikova Tatyana R., Tikhomirov Alexey N.

13. Wearable Navigation System for Safety Assurance for the Blind and Visually Impaired in Dynamic Environments
    Palogiannidis Dimitrios

14. A Method for Managing Upper Limb Rehabilitation Based on Monitoring the Biotechnical Resonance Criterion
    Petrunina Elena V., Filist Sergei A., Ermakov Dmitrii A., Skvortsov Mikhail K.

15. A Reduced-Channel Spectral Imaging System for Tissue Assessment with Task-Oriented Reconstruction of Optical Indices
    Shatkovskaya Margarita S., Gonoshilkin Daniil Iu., Sharivzyanov Dmitry R.

14:00-15:00 – Lunch Break

15:00-15:45

16. Control of a Hand Exoskeleton with Pneumatic Actuator in Virtual Reality
    Tychkov Alexander Yu., Khizbullin Robert N., Chernyshov Denis S., Ovchinnikov Dmitry L., Alimuradov Alan K., Sashina Alina D.

17. A System of Multiparametric Analysis of EEG Data for the Rehabilitation of People with Mental Disorders Based on Controlled Audio
    Tychkov Alexander Yu., Alimuradov Alan K., Tverskaya Sofia Yu., Chernyshov Denis S., Simakova Oksana S., Churakov Petr P.

18. Algorithmic Artificial Intelligence Module for Identifying Risk Factors of Cardiovascular Diseases in Primary Health Care
    Yarmukhamedova Dilfuza Z., Nurillaeva Nargiza M., Nuritdinova Nigora B.

Section 3 – Systems for Medical Decision Support. Intellectual Systems in Healthcare

Секция 3 – Системы поддержки принятия решений в медицине. Интеллектуальные системы в здравоохранении

24.09.2026
10:00-12:00
Room 622, Main Building, TSTU

Online connection https://telemost.yandex.ru/j/59543857908060

1. Decision Support System for Skin Disease Screening Based on Formally Verified Synthetic Dermoscopic Data and XAI
   Averkin Alexey N., Trofimov Yuri V., Trusov Ivan A., Lopatin Maksim, Lebedev Alexander D.
2. Optimization of Patient Selection for 2RT Therapy: A Method for Automatic Identification of Atrophy in OCT Images
   Ionov ArtemYu., Ilyasova Natalya Yu., Demin Nikita S., Dotsenko Kamila R., Zolotarev Vladimir V.
3. Algorithm for the Intelligent Analysis of the Condition of Vertebral Bodies in Patients with Osteoporosis According to Computed Tomography of the Spine
   Lyakin Maxim Ya., Ilyasova Natalya Yu., Demin Nikita S., Alekhin Eduard N.
4. A Decision-Making Algorithm for the Diagnosis of Lung Diseases Based on the Integrated Analysis of Respiratory Sound Signals and Medical Images
   Magrupov Talat, Ahmadjonov Ravshanjon, Nurillaeva Nargiza M., Zubaydullayeva Maksuda, Abdumalikova Feruza
5. A Methodology for Early Diagnosis of Lung Diseases Based on Multimodal Analysis of Audio Signals and X-Ray Images
   Magrupov Talat, Ahmadjonov Ravshanjon
6. Artificial Intelligence in Flow Cytometry: a Model for the Multiparametric Analysis of Leukocyte Populations
   Nikitaev Valentin G., Zabotina Tatyana N., Pronichev Aleksandr N., Borunova Anna A., Samofalova Alevtina S., Torosyan Marlen S.
7. Intelligent Diabetes Risk Prediction System Based on LightGBM and SHAP
   Pei Yuting, Emmanuel Elochukwu, Ibrahem Anaghim
8. Deep Learning-Based Three-Class Classification for Lung CT Image Diagnosis
   Pei Yuting, Nadeem Rehmat, Rodriguez Sanchez Kevin Alejandro, Sanaullah Muhammad, Haque Ashraful, Ibrahim Anaghem

12:00-12:15 – Coffee Break

12:15-13:15

9. An Expert System for Prediction of Silent Myocardial Ischemia with a Fuzzy Network Knowledge Base Structure
   Rodionova Sofia N., Korenevsky Nikolay A., Shultsev Alexander A.
10. A Hybrid Zonal PCA and Multi-output MLP Classifier for Micro-Facial Movement Detection
    Sablina Victoria A., Iakovlev Nikita V., Melnik Olga V.
11. Identification of Biomarkers for Type III Neovascularisation in Age-Related Macular Degeneration Using the Direction Field
    Samigullin Ravil, Ilyasova Natalya Yu., Demin Nikita S., Zamytskiy Evgeniy
12. Pipeline for Automatic Calculation of the Rotational Profile of the Lower Extremities Based on Computed Tomography Data
    Zhukova Anna V., Ilyasova Natalya Yu., Pervushkin Sergei S., Demin Nikita S.

Section 4 – Technologies of Digital Healthcare

Секция 4 – Технологии цифрового здравоохранения

24.09.2026
16:00-17:15
Room 624, Main Building, TSTU

Online connection https://telemost.yandex.ru/j/03488923043564

1. Development of a Smart IoT- and AI-Based System for Monitoring Human Vital Signs
   Gaibnazarov Bobur, Abdukarimov Sherali, Makhmudov Makhmud, Urokov Azimjon, Rixsiboyev Rasul, Naimov Asirbek

2. Edge-Ai Adaptive Multi-Sensor Physiological Monitoring System Using Esp32-Based Hybrid Cnn–Lstm Processing
   Gaibnazarov Bobur, Makhmudov Makhmud, Alimova Z.A., Abdukarimov Sherali, Rixsiboyev Rasul, Jabborberganov Javohir

3. Mathematical Modeling of Finger Dynamics of a Bionic Prosthesis Taking into Account Viscoelastic Drive
   Khizbullin Robert N., Kopylov Maksim O., Gerashchenko Sergey I., Ha Quang Thinh Ngo, Thanh Phuong Nguyen, Tran Thi Thu Hanh

4. Centralized Administration Platform for RIS/PACS Infrastructures
   Krayushkin Denis V., Chepovskiy Andrey M., Gavrilov Andrey V.

5. Detection of Epileptic Seizures in Children Using Scalp EEG Based on Deep Learning
   Kuchkarova Nozimakhon A.

Section 5 – Innovation Management and Quality Assurance in Healthcare

Секция 5 – Инновационный менеджмент и обеспечение качества в здравоохранении

24.09.2026
15:00-16:15
Room 622, Main Building, TSTU

Online connection https://telemost.yandex.ru/j/59543857908060

1. Design and Fabrication of Flexible Multi-Channel Neurointerfaces for Neural Recording and Electrical Stimulation
   Isaev Nikita R.

2. Optimization of Substrate Materials for an Organic Semiconductor Implant for Optoelectronic Stimulation of Peripheral Nerves
   Iusupovskaia Elena A.

3. Methodology for Generating Laboratory Data Characteristic Space for Cognitive Imaging in Medical LIS
   Kostenkova Mariya Yu., Gerashchenko Mikhail S., Gerashchenko SergeyI.

4. Wearable Wireless Neurostimulation System Designed for Peripheral Nerve Regeneration
   Markov Aleksandr G.

5. Development of a Real-Time Decision Support System for Cardiac Risk Stratification and Automated Remote Alerting via Telegram Bot API
   Sali Salar, Yuldashev Zafar M., Husein Kawter, Hasan Bou Issa Housam

Section 6 – Biomedical Engineering Education Technologies

Секция 6 – Технологии образования в области биомедицинской инженерии.

24.09.2026
13:15-13:30
Room 622, Main Building, TSTU

Online connection https://telemost.yandex.ru/j/59543857908060

1. Interactive Training Simulator for Recognizing Defects in X-ray Images
   Krivonogov Leonid Yu., Ulybina Darina V.

Preparation of conclusions based on the results of the conference

24.09.2026
17:30-18:00
Conference Hall: Uzbekistan-Japan youth innovation center

Online connection https://telemost.yandex.ru/j/32033583596183

Closing of the conference

25.09.2026
11:00-13:00
Conference Hall: Uzbekistan-Japan youth innovation center

Online connection https://telemost.yandex.ru/j/32033583596183