

Welcome to



EUSPN 2025

The 16th International Conference on
Emerging Ubiquitous Systems and
Pervasive Networks



ICTH 2025

The 15th International Conference on
Current and Future Trends of
Information and Communication
Technologies in Healthcare

October 28 – 30, 2025
Istanbul, Türkiye

With support of

Acadia University, Canada & Hasselt University, Belgium



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EUSPN / ICTH

SYMPOSIA AND WORKSHOPS

EUSPN	The 16th International Conference on Emerging Ubiquitous Systems and Pervasive Networks
ICTH	The 15th International Conference on Current and Future Trends of Information and Communication Technologies in Healthcare
DS	The 3rd International Workshop on Digital society: In the Eve of the 6th Information Revolution
EATH	The 4th International Workshop on Emerging Advancements and Technologies in Healthcare
EICN	The 11th International Symposium on Emerging Information, Communication and Networks
HODII	The 6th International Workshop on Healthcare Open Data, Intelligence and Interoperability
IMS-IoT	The 2nd International Workshop on Intelligent Mobile Systems based on Internet of Things
IoTHDA	International Workshop on Internet of Things (IoT) in Healthcare Data Analytics
ISFN	The 3rd International Workshop on Intelligent Systems and Future Networks
PSCare	The 11th International Workshop on Privacy and Security in HealthCare

PROGRAM AT A GLANCE

EUSPN 2025, ICTH 2025 and Workshops

Program Time Slots

Timing	Tuesday 28 October 2025					
18:00 - 19:00	Registration	Registration Desk				
		ROOM 1		ROOM 2		ROOM 3

Timing	Wednesday 29 October 2025					
Starts 08:30	Registration	Registration Desk				
09:00 - 09:10	Opening Ceremony	Room 1				
09:10 - 10:00	Keynote Speaker	Dr. Esteve Hassan				
10:00 - 10:25	Coffee Break	Meeting Foyer				
10:30 - 12:00	Technical Sessions (1)	EUSPN-S1		ICTH-S1		D5-S1
12:00 - 12:55	LUNCH	Lunch Room (Restaurant)				
13:00 - 14:30	Technical Sessions (2)	EUSPN-S2		ICTH-S2		D5-S2
14:30 - 14:55	Coffee Break	Meeting Foyer				
15:00 - 16:30	Technical Sessions (3)	EUSPN-S3		IMS-IoT-S1		HODII-S1
16:30 - 18:00	Technical Sessions (4)	EUSPN-S4		IMS-IoT-S2		HODII-S2
19:00 - 20:30	Banquet and Award Ceremony	Banquet Room				

Timing	Thursday 30 October 2025					
Starts 09:00	Registration	Registration Desk				
				Room 1		
09:00 - 09:50	Keynote Speaker	Prof. A. Erdem Canda				
10:00 - 11:00	Technical Sessions (5)	PSCare&IoT-HDA		IMS-IoT-S3		D5-S3
11:00 - 12:00	Technical Sessions (6)	EATH&EICN		EUSPN-S5		D5-S4

	End of Event					
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KEYNOTE I

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Dr. Esteve Hassan

Acadia University, Nova Scotia, Canada

Abstract

About the Speaker:

Dr. Esteve Hassan is an Associate Professor in the Jodrey School of Computer Science at Acadia University, where he leads innovative research and instruction in the fields of the Internet of Things (IoT), cyber-physical systems, and machine learning. He earned his Ph.D. in Electronic and Computer Engineering from University College Cork (UCC)-Ireland, following an M.Eng. and B.Sc./M.Sc. in the same discipline. He completed two years of postdoctoral studies at the Tyndall National Institute at University College Cork, followed by another two years at Toronto Metropolitan University (TMU). He also worked as an Assistant Professor at both Brandon and McMaster Universities in Canada.

Dr. Hassan's research focuses on designing low-power, energy-harvesting sensor modules, FPGA-optimized digital prototyping, and predictive analytics for IoT and Industry 4.0 applications. His scholarly work has resulted in multiple peer-reviewed publications, including recent contributions to anomaly detection in SELinux security policies. He is a former Canada Industry Chair also a valued member of the NSERC Scholarships and Fellowships Review Committee for Computing Sciences, reflecting his national standing.

Dr. Hassan teaches courses in embedded systems, data analytics, and machine learning, and supervises undergraduate and graduate students on applied research projects leveraging wireless sensor networks and smart automation. His collaborative efforts span academia and industry, enhancing real-world impact through technology-driven solutions.

KEYNOTE II

New technologies in robotic prostate cancer surgery

Prof. A. Erdem Canda

Koç University Hospital, İstanbul, Türkiye

Abstract

About the Speaker:

Prof. Canda has been primarily focused on robotic urology since 2009. He has an experience of more than 1000 robotic urology procedures. He has used Intuitive Da Vinci S, Si, X and Xi surgical robotic systems. Very recently, he has started to use Medtronic Hugo RAS system. He was granted numerous awards especially in congresses held by the European Robotic Urology Society (ERUS). He is a past ERUS board member and also a member of ERUS scientific working group. He has authored numerous papers, book chapters and studies on the robotic urology. He took role and co-authored in many international multi-center trials (ERUS & IRCC).

Prof.Canda is heavily involved in robotic urology training and has served as a course faculty in many robotic urology courses in international and national setting. He educated the first & second urologists in his country within the scope of the ERUS curriculum robotic prostate cancer surgery education program. He is also serving as an editor, chapter editor, member of scientific committee and reviewer in many international and local scientific journals. Prof.Canda is a member of many scientific societies including EAU, AUA, SIU, Endourological Society, SRS, and national urology associations. He is the founding member of IURES and SERUS.

DETAILED PROGRAM

Tuesday, October 28, 2025

Registration 18:00 - 19:00

Room: Registration Desk

Wednesday, October 29, 2025

Registration Starts 08:30

Room: Registration Desk

Opening 09:00 - 09:10

Opening Ceremony

Room: Main Meeting Room

Keynote 09:10 - 10:00

Title Title Title

Dr. Esteve Hassan, Acadia University, Canada

Session Chair: Elhadi Shakshuki, Acadia University, Canada

Room: Main Meeting Room

Coffee Break 10:00 - 10:25

Room: Meeting Foyer

Technical Sessions (1) 10:30 - 12:00

EUSPN Session S-1

Session Chair:

Room: Room 1

Development of an Energy-Efficient Security Control Installation Based on Fiber-Optic Sensors for The Water Resources Monitoring System

Alexandr Neftissov, Lalita Kirichenko, Ilyas Kazambayev and Aliya Aubakirova

Federated Drift-Aware Graph Neural Forecasting for Real-Time Passenger Flow

Aivar Sakhipov, Diar Begisbayev and Didar Yedilkhan

Assessing the Impact of Route Interlining via Bus Schedule Optimization

Taner Cokyasar, Sadjad Bazarnovi, Omer Verbas, Abdelrahman Ismael and Abolfazl Kouros Mohammadian

Examining Physical Realism in Motorcycle Simulators

Wondwesen Mamo, Qinaat Hussain, Hussain Ahamed, Mohamed Arbab, Wael Alhajyaseen, Kris Brijs, Ariane Cuenen and Somaya Al-Maadeed

ICTH Session S-1

Session Chair:

Room: Room 2

From Conversation to Agent: LLM-Driven Design of Structured Healthcare Agents

Jasmin Heierli, Elena Gavagnin, Wenyan Wu, Daniela Händler-Schuster, Mateusz Dolata, Gerhard Schwabe and Alexandre de Spindler

Comparative Evaluation of AI-Based Pathogenicity Prediction Tools for BRCA Variants

Bazargul Matkerim, Nazerke Murat, Nurtas Marat and Aizhan Altaibek

Lay recognition and understanding of common medical terminology: personal profile analysis

Liliya Makhmutova, Fernando Perez-Tellez, Giancarlo Salton and Robert Ross

RAG pipeline for private well contamination guidance: A comparative study of retrieval and generation strategies

Yasmine El Moussaoui, Mehdi Adda, Lily Lessard, Tamari Langlais and Stéphane Turcotte

DS Session S-1**Session Chair:** Kateryna Kolesnikova, International IT University, Kazakhstan**Room:** Room 3

Integrating Technical and Language Skills for Summary Writing Improvement Through IT Microblogging on Instagram
Aissulu Kaldarova and Marco Vasquez

Enhancing Kazakhstan Students' IELTS Writing Task 2 Preparation through the Miro Board

Altynay Kenzhebekova, Saniya Kabdrgalinova, Assel Tukhtabayeva, Meruyert Abdulina, Aizhan Kalmykbayeva and Nurganym Amanbekova

A Comparative Analysis of Open Source Cyber Ranges for Cyber security Education

Emil Johannes Lundqvist, Pilleriin Sara Lillemets and Nicola Dragoni

The role of digital communities in the development of soft skills among students of kazakhstan universities: assessing the effectiveness at the intersection of formal and non-formal education

Anar Amangozhayeva and Erkezhan Amangozhayeva

Lunch Break**12:00 - 12:55****Room:** Meeting Foyer**Technical Sessions (2)****13:00 - 14:30****EUSPN Session S-2****Session Chair:****Room:** Room 1

Real-Time Football Match Analysis: Leveraging YOLO for Enhanced Object Detection and Possession Tracking

Khalil Ahmad Yousef, Ahmad El-Haj, Bassam Mohd, Nermin Dawoud, Salahaldeen Alnaimat and Ahma Saleh

Governance-as-Code for LLM Workflows: A Four-Plane, Dual-Proxy Gateway for Prompt, Tool and Agentic-AI Security

Ralph Deters

Leveraging Machine Learning Techniques in Converting 2D Floorplans Images to 3D Models: Applications, Challenges, and Future Directions

Ibsen G. Bazie, Boaz N. Nzazi, Jirince K. Biaba, Tasho Tashev, Witesyavwirwa V. Kambale, Kyandoghere Kyamakya, Nathanael Kasoro and Selain K. Kasereka

Causal Machine Learning Applied to Macroeconomic Analysis: Applications, Challenges, and Perspectives

Jirince K. Biaba, Christian Mulomba M., Ibsen G. Bazie, Boaz N. Nzazi, Tasho Tashev, Witesyavwirwa Vianney Kambale, Kyandoghere Kyamakya, Nathanael Kasoro, Vinh Ho Tuong and Selain K. Kasereka

ICTH Session S-2**Session Chair:****Room:** Room 2

Recognition of Anxiety-Related Activities using 1D-CNN-BiLSTM on Sensor Data from a Commercial Wearable Device

Ugonna Oleh and Roman Obermaisser

Parkinson's disease detection based on 3D Convolutional Neural Network and DaTscan imaging

Nour El Houda Boulkrinat, Hamza Taourirt and Samir Saada

From AR to VR: Designing Personalized Immersive Therapies for Parkinson's Disease

Rui Neves Madeira, Pedro Albuquerque Santos, Patricia Macedo, João Viana and Mariana Cachapa

Securing Inclusive Digital Environments: An Adaptive Approach to ISO 27001 for Assistive Technologies in SMEs

Damilola Innomesanghan, Emmanuel Kiwamu, Sergey Butakov and Eslam G. Abdallah

DS Session S-2**Session Chair:** Kateryna Kolesnikova, International IT University, Kazakhstan**Room:** Room 3

Neural network LSTM autoencoder model for early anomaly detection in geophysical soil monitoring

Artem Bykov, Nurkamilya Daurenbayeva, Symbat Mamanova, Almas Nurlanuly and Gaini Tleuova

Digital risks and self-regulation: an international analysis of the spread of gambling addiction

Yermek Buribayev, Makpal Abidinova and Aigerim Lambekova

Using Blended Learning and AI in Teaching Physics in Higher Education Institutions

Aigerim Shapiyeva, Kymbat Baigissova, Gabit Altybayev, Yevgeniya Daineko, Symbat Nurakhmetova and Gulbanu Abdramanova

Solving NP-Complete Problems via Language Models: A Case Study with BERT

*Aigerim Aitim and Anel Auyezova***Coffee Break****14:30 - 14:55****Room:** Meeting Foyer**Technical Sessions (3)****15:00 - 16:30****EUSPN Session S-3****Session Chair:****Room:** Room 1

Load-Balancing Strategies for Forecasting with Mixture-of-Experts Architecture

Kyrylo Yemets, Ivan Izonin, Mariia Zimokha and Michal Gregus

TempHypE-GNN: Hyperbolic Graph Neural ODEs for Hierarchical Temporal Knowledge Graphs

Amangel Bhullar and Ziad Kobti

Artificial Intelligence for Public Expenditure Analysis in Low-Income Countries: Opportunities and Challenges

Boaz N. Nzazi, Jirince K. Biaba, Ibsen G. Bazie, Tasho Tashev, Witesyavwirwa Vianney Kambale, Vinh Ho Tuong, Kyandoghere Kyamakya, Nathanael Kasoro and Selain K. Kasereka

Supervised Learning for Earthquake Forecasting in the Almaty Seismic Zone

*Marat Nurtas, Aizhan Altaibek, Zhanibek Ydyrys and Ayazhan Kumarkhanova***IMS-IoT Session S-1****Session Chair:** Andrii Biloshchytskyi, Nurkhat Zhakiyev, Didar Yedilkhan, Astana IT University, Kazakhstan**Room:** Room 2

Vulnerability Analysis and Threat Modeling in Wireless Networks of Smart City Infrastructures

Tamara Zhukabayeva, Yerik Mardenov, Nurdaulet Karabayev, Aigul Adamova and Dina Satybaldina

Driver Behaviour Analysis Using Telematics Sensor Data and Deep Learning Models

Nurbakyt Agybetov, Beibut Amirgaliyev and Didar Yedilkhan

IoT-based monitoring and intelligent control for microgreens in vertical farming systems

Kuanysh Bakirov, Jamalbek Tussupov, Aruzhan Shoman, Ibraheem Shaye, Akhmet Tussupov, Yan Kudashov and Zeinegul Sabitova

Abstract model of a virtual physician assistant for automating medical documentation based on natural language processing and artificial intelligence technologies

*Dilara Azhanova, Sapar Toxanov, Aidos Mukhatayev and Temirlan Karibekov***HODII Session S-1****Session Chair:** Manuel Filipe Vieira Torres Santos and Tiago Guimarães, University of Minho, Portugal**Room:** Room 3

From Data Preprocessing to Model Development: Building Machine Learning Pipelines for Amblyopia Screening

Inês Mendes, Tayan Peler, Madalena Passos, Vasco Miranda, Regina Sousa e António Abelha

A proposal for standardized PREMs implementation in hospital context in Portugal

Madalena Passos, Inês Mendes, Tayan Peler e Hugo Peixoto

Towards a Body of Knowledge for Intelligent Low-Code/No-Code Systems Empowered by GenAI

Daniel Sá, Ricardo Duarte, Agostinho Barbosa, Tiago Guimarães, Manuel Filipe Santos

Comparative Analysis of Optimization Algorithms in Medical Examination Scheduling

Rafael Amorim, Afonso Lobo, João Lopes, Maria Salazar, Tiago Guimarães, Júlio Duarte, Manuel Filipe Santos

Technical Sessions (4)**16:30 - 18:00****EUSPN Session S-4****Session Chair:****Room:** Room 1

Comparative Analysis of Scalable IoT Topologies for Optimal and Precise Greenhouse Environment Monitoring

Claire Dinn, Roshan Adhikari, Esteve Hassan, Athanasios Paschos

Impact of Resampling techniques in Deep Learning based Intrusion Detection: A Comparative Study on NSL-KDD and UNSW-NB15

Nisha Dangol and Amir Eaman

Prompting for Engagement: Using the ICAP Framework to Guide Prompt Design in LLM-Powered Dialogue-Based Tutoring System for Novice Programmers

Julieto Perez and Ethel Ong

Can Visual Attention Serve as an Explanation?

Piotr Kluczyński, Fatima-Zahrae El-Qoraychy, Yazan Mualla, Mahjoub Dridi, Hedi Tebourbi and Sana Nouzri

IMS-IoT Session S-2**Session Chair:** Andrii Biloshchytskyi, Nurkhat Zhakiyev, Didar Yedilkhan, Astana IT University, Kazakhstan**Room:** Room 2

Analysis of Vulnerabilities and Practical Attacks on WPA3-Enterprise in Corporate Wireless Networks

Saken Tleuberdin, Aliya Issainova, Aigul Adamova, Tolegen Aidynov, Gulfarida Samashova and Dina Satybaldina

AI-Driven Urban Analytics Using IoT-Enabled Mobile Sensor Networks for Environmental Monitoring

Didar Yedilkhan, Sabina Salesnova, Gulden Ormanova, Batyrzhan Akhmetzhanov, Zhibek Sarsenova and Beibut Amirgaliyev

Securing the Industrial Internet of Things: Threats, Vulnerabilities, and Recommendations

Akzhibek Amirova, Laura Aldasheva and Aliya Abdiraman

A Scalable IoT Platform for Intelligent Routing and Street Coverage: Bridging Adaptive Models and Urban Simulation

Nursultan Khaimuldin, Bexultan Turgunov, Aidarbek Shalakhmetov, Dilnaza Maratova and Nurgissa Kabarbek

New compression-structure targeted multispectral image's archiving method

Leila Rzayeva, Zhaksylyk Kozhakhmet, Alisher Batkuldin, Nursultan Nyssanov, Lalita Kirichenko and Alemkhan Token

HODII Session S-2**Session Chair:** Manuel Filipe Vieira Torres Santos and Tiago Guimarães, University of Minho, Portugal**Room:** Room 3

Artificial Intelligence for Corneal Ectasia Screening: A Review and Insights from Data Preprocessing

Tayan Peler, Inês Mendes, Madalena Passos, Daniel Sá, Vasco Miranda, Ana Abreu e José Machado

An openEHR Approach to Nutritional Risk Screening

Francini Hak, Diana Ferreira, Cristiana Neto, José Machado and António Abelha

A data pipeline for support Decision Support System in Neonatology

Inês Fernandes, Matilde Sousa, Bruno Silva, Lucas Lomba, Elisa Proença, Júlio Duarte

A Predictive Modeling Approach for Estimating Hospital Appointment Duration

Sofia Touças, David Cruz, Marco Carvalho, César Quintas, João Lopes, Tiago Guimarães, Júlio Duarte

Banquet and Award Ceremony**19:00 - 20:30****Banquet Room**

Keynote 09:00 - 09:50

Title Title Title

Prof. A. Erdem Canda, Koç University Hospital, Türkiye

Session Chair: Esteve Hassan, Acadia University, Canada

Room: Main Meeting Room

Technical Sessions (5) 10:00 - 11:00

PSCare&IoTHDA Session

Session Chair: Mohamed Rasslan, Ministry of Higher Education and Scientific Research, Cairo

Room: Room 1

Improving Emergency Care Efficiency through IoT-Driven Bed and Blood Booking Solutions

Khaoula Ballouk and Ismail Lagrat

Towards Transparent Clinical NLP: Lightweight Justification Generation with Privacy Guarantees

Nabila Khodeir, Mahmoud Nasreldin and Mohamed Rasslan

Secure WASEF: Secure Assistive Mobile Application for Visually Impaired Users

Nabila Khodeir, Fatma Elghannam, Randa Bayoumi, Allam Shehata, Mohamed Rasslan

Transformer-based Human Action Recognition using Skeleton Heatmap

Alan Teng, Aman Anand, Farhana Zulkernine

IMS-IoT Session S-3

Session Chair: Andrii Biloshchytskyi, Nurkhat Zhakiyev, Didar Yedilkhan, Astana IT University, Kazakhstan

Room: Room 2

One Perturbation to Fool Them All: Universal Adversarial Attacks Against Federated Models

Aidos Askhatuly, Dinara Berdysheva, Didar Yedilkhan and Azamat Berdyshev

A Hybrid Mobile-Cloud Architecture for Intelligent Document Processing

Sabina Kappassova and Aray Maratova

Intelligent Methods to Provide Information Security for IoT Using Machine Learning

Dinara Berdysheva, Aidos Askhatuly and Azamat Berdyshev

Forecasting the Potential Scenarios of CO2 Emissions in Kazakhstan Using Deep Learning (DL) Predictive Models

Zhenis Otarbay, Abzal Kyzyrkanov, Nazira Tursynova, Bakhtiyar Kalzhan, Damir Karimov and Olzhas Sayakov

DS Session S-3

Session Chair: Kateryna Kolesnikova, International IT University, Khazakstan

Room: Room 3

Legal Eligibility Inference from Text: Constraint Extraction with Pretrained Language Models

Aigerim Aitim and Anel Auyezova

Developing Search Methods for Unstructured Information Using NP-Complete Problem Solving

Anel Auyezova, Aigerim Aitim and Bakhtgeriy Sinchev

Methods for pre-processing and analysis of fund images for detection of diabetic retinopathy

Saya Sapakova, Nurmaganbet Yesmukhamedov, Askar Sapakov, Aknur Yemberdiyeva and Zhadra Kozhamkulova

Designing Realistic Avatars for Educational VR Environments on Meta Quest 3

Umitkhan Turzhanov, Dossym Ibray, Miras Uali, Madina Ipalakova, Yevgeniya Daineko and Dana Tsoy

The use of IoT technologies in STEM laboratories using the example of Nazarbayev Intellectual Schools

Makpal Mukanova, Yevgeniya Daineko, Aizhan Yerzhanova, Venera Manasheva and Gulmira Bessenbayeva

Technical Sessions (6)**11:00 - 12:00****EATH&EICN Session****Session Chair:****Room:** Room 1

AI-Powered Posture Assessment and Physiotherapy Recommendation App

Sherin Hazboun, Nour Alhuda Abu Nasser, Tala Al Dibs and Zainab Atwa

The Effectiveness of VR Glasses as a Tool for Immersive Language Education: Insights from Questionnaires and Interviews

Aigerim Kereibayeva, Regina Sharshova, Dinara Dyussenova, Dinara Aliyeva and Tolkyntoktarova

EUSPN Session S-5**Session Chair:****Room:** Room 2

A New Biotechnology Era: Computer Science Enabled Solutions to Environmental Challenges in Agriculture

Esteve Hassan, Athanasios Paschos, Claire Dinn and Amir Eaman

Urban Mobility and the Multiscale Structure of Road Networks

Armando Bazzani, Alberto Amaduzzi, Filippo Dalla, Lorenzo di Meco, Gregorio Berselli, Davide Micheli and Aldo Vannelli

LSTM-Based Forecasting of Seismic Events Using Geomagnetic Indices with Balanced Training

Marat Nurtas, Aizhan Altaibek and Diana Zakir

DS Session S-4**Session Chair:** Kateryna Kolesnikova, International IT University, Khazakstan**Room:** Room 3

Cognitive-discursive processes of IT specialists in the digital society

Dinara Kenzhebulatova, Fariza Abdrait, Oxana Bublikova, Lyailya Togzhanova and Albina Rassilova

Higher Education in the Era of the Sixth Information Revolution: Digital Competencies as a Catalyst for Economic Transformation and Business Innovation

Aigerim Lambekova, Gulnazym Shakenova, Rakhila Rakhmetova, Ainura Maxyutova and Regina Andekina

Justification of an adaptive cryptographic key generation system with entropy monitoring for secure infrastructure in open-mines

Talgat Kaiym, Suleimen Kaimov, Amandyk Tuleshov, Aidarkhan Kaimov, Abylay Kaimov, Zamanbek Azil and Yelaman Abussagatov

Conceptual Framework for Sustainable Development Projects in a BANI Environment Using AI Tools

Sergiy Bushuyev, Svetlana Murzabekova, Maira Khussainova, Rakhmatullo Saidullayev, Denis Bushuiev and Kateryna Kolesnikova

END of the Event