

Conference Programme

03–05 September 2026 · Hotel Chernomore, Varna, Bulgaria



All times in this programme are Varna time (EEST, UTC+3). Every presenter taking part on-line carries under the entry the start of their session in their own time zone, which is when they are expected on the line.

Quick look

Thursday, 3 September 2026

	HALL A CHERNO MORE	HALL B GALATA	HALL C ODESSOS
09:30–10:00	Registration desk opens		
10:00–10:20	Official Opening of IS'26 — Acad. Vassil Sgurev		
10:20–11:00	Invited Talk — Acad. Janusz Kacprzyk (on-line) · host Lyubka Doukovska Towards new AI/LLM-enabled techno-centric, human-centric and value-centric smart environments		
11:00–11:20	Coffee break		
11:20–13:00	11:20 Invited Session „AI and Blockchain for Digital Preservation of Cultural Heritage“ Chair: Ivan Lambov	11:20 Trustworthy & Ethical AI	11:20 Machine Learning (I)
13:00–14:20	Lunch break		
14:20–16:30	14:20 Data Science & Knowledge Discovery 15:50 Intelligent Agents	14:20 Intelligent Decision-Making Systems (I) 15:20 Digital Health & Bioengineering (I)	14:20 Human-Machine Interaction
16:30–16:50	Coffee break		
16:50–18:50	16:50 Invited Session „AI, Games, and Gamification in Education“ Chair: Julita Vassileva (on-line)	16:50 Telecommunication & Networked Systems 17:40 Intelligent Decision-Making Systems (II)	16:50 Smart Cities & Urban Computing 17:40 Machine Learning (II)

Friday, 4 September 2026

	HALL A CHERNO MORE	HALL B GALATA	HALL C ODESSOS
09:30–10:00	Registration desk open		
10:00–10:40	Invited Talk — Prof. Guy De Tré · host Lyubka Doukovska Future-Proof Data Management: Making Data Veracity a First-Class Principle		
10:40–11:00	Coffee break		
11:00–13:00	11:00 Invited Session „Intelligent Agriculture Risk Modeling and Optimization“ Chair: E. Trichkova-Kashamova	11:00 Intelligent Cybersecurity 12:20 Energy & Power Systems	11:00 Knowledge Representation & Reasoning 12:00 Bio-Inspired & Evolutionary Intelligence

13:00–14:20	Lunch break		
14:20–16:20	14:20 Intelligent Pattern & Signal Processing	14:20 Explainable AI (XAI) 15:35 Internet of Things	14:20 Industrial & Manufacturing Systems 15:20 Intelligent Control & Measurement
19:30	Conference Dinner		

Saturday, 5 September 2026

	HALL A CHERNO MORE	HALL B GALATA	HALL C ODESSOS
09:30–10:00	Registration desk open		
10:00–10:40	Invited Talk — Prof. Alexander Gegov · host Lyubka Doukovska Explainable Artificial Intelligence: A Surrogate Modelling Approach		
10:40–11:00	Coffee break		
11:00–12:00	11:00 Education & Intelligent Tutoring	11:00 Digital Health & Bioengineering (II)	11:00 Intelligent Transportation Systems
12:00–12:15	Closing of IS'26		

DAY 1

Thursday, 3 September 2026

09:30–10:00	Registration desk opens
10:00–10:20	Official Opening of IS'26 — Acad. Vassil Sgurev · Hall A · Chernomore
10:20–11:00	Invited Talk — Acad. Janusz Kacprzyk (on-line) · host Lyubka Doukovska · Hall A · Chernomore <i>Towards new AI/LLM-enabled techno-centric, human-centric and value-centric smart environments</i>
11:00–11:20	Coffee break

11:20–13:00

Invited Session „AI and Blockchain for Digital Preservation of Cultural Heritage“

Chair: Ivan Lambov

161 Decentralized Digital Asset Repository Architecture Built on Solid Pods and Blockchain

Ivan Lambov

Presented by Ivan Lambov — Bulgarian Academy of Sciences, Bulgaria

132 LLM-Assisted Ontology Engineering for Intangible Cultural Heritage in a Lower-Resourced Language: A Human-in-the-Loop Case Study on Bulgarian Crafts and an Application of a Reusable Error Ontology

Sebiha Madanska

Presented by Sebiha Madanska — Paisii Hilendarski University of Plovdiv, Bulgaria · **on-line****76 Selection of Cryptographic Mechanisms for Blockchain E-Voting**

Teodora Noncheva, Irina Radeva

Presented by Teodora Noncheva — Trakia University, Bulgaria

168 A Reusable Governance-Aware Evidence Infrastructure for Traceability Applications

Aleksandar Panayotov, Ivan Lambov, Mariana Atanasova

Presented by Aleksandar Panayotov — Sofia University, Bulgaria · **on-line**

13:00–14:20 Lunch break

14:20–15:50

Data Science & Knowledge Discovery

Chair: Guy De Tré

67 An Ontological Model for Semantic Interoperability in a Digital University Information Ecosystem

Vassil Milev

Presented by Vassil Milev — Department of Computer Systems and Technologies St. Cyril and St. Methodius University of Veliko Tarnovo Veliko Tarnovo, Bulgaria · **on-line****170 Auditing LLM-Based Coreference Rewriting for Narrative Retrieval**

Miroslava Dimitrova, Irina Radeva, Lyubka Doukovska, Ivan Popchev

Presented by Miroslava Dimitrova — Institute of Information and Communication Technologies - BAS, Bulgaria · **on-line****43 Multi-Label Toxicity Detection for Romanian Online Communities Using Fine-Tuned Transformers**

Ionut Catalin Grecu, Paul Stefan Popescu, Marian Cristian Mihăescu

Presented by Ionut Catalin Grecu — University of Craiova, Romania · **on-line****121 TeCoCo: Temporal Knowledge Graph Completion through Compound Geometric Operations in the Complex Space**

Bao Nguyen, Long Nguyen

Presented by Bao Nguyen — Faculty of Information Technology, University of Science, Ho Chi Minh City, Vietnam · **on-line**

► session starts 18:20 UTC+7

64 Automating Security Risk Assessment: A RAG-Based Approach for Compliance Auditing

Mohammed Haaris Shaikh, Mohammed Rahil Wahedna, Amaan Syed, Irfan Siddavatam, Ashwini Dalvi

Presented by Amaan Syed — K.J Somaiya School of Engineering, India · **on-line**

► session starts 16:50 UTC+5:30

15:50–16:30

Intelligent Agents

Chair: Stanimir Stoyanov

15 Modeling Financial Risks in Smart Agriculture

Todor Todorov, Veneta Tabakova-Komsalova, Stanimir Stoyanov, Stoyan Cheresharov, Ivan Stoyanov

Presented by Todor Todorov — Faculty of Mathematics and Informatics University of Plovdiv “Paisii Hilendarski” Plovdiv, Bulgaria · **on-line**

53 Event Model for Agent-Oriented Platforms

Ivan Stoyanov, Boyan Belichev, Veneta Tabakova-Komsalova, Stanimir Stoyanov, Asya Stoyanova-Doycheva

Presented by Veneta Tabakova-Komsalova — Centre of Excellence in Informatics and Information and Communication Technologies, Sofia, Bulgaria

16:30–16:50 Coffee break

16:50–18:50

Invited Session „AI, Games, and Gamification in Education“

Chair: Julita Vassileva (on-line) · host Valentina Terzieva

167 Recent Trends and Challenges in Immersive Technologies for STEM Education

Yanina Popova, Edita Djambazova, Valentina Terzieva

Presented by Yanina Popova — Institute of Informationa and Communication Technologies, Bulgarian Academy of Science, Bulgaria

134 Application of Games and Gamification in Bulgarian STEM education

Elena Paunova-Hubenova, Yanina Popova, Salzitsa Martinska, Desislava Simeonova

Presented by Yanina Popova — Institute of Informationa and Communication Technologies, Bulgarian Academy of Science, Bulgaria · **on-line**

112 A Pilot Experimental Evaluation of a Context-Grounded AI Instructional Assistant in Undergraduate Programming Labs

Wiktoria Zdyb, Somayeh Fatahi

Presented by Somayeh Fatahi — WILFRID LAURIER UNIVERSITY, Canada · **on-line**

► session starts 09:50 UTC-4

120 Comparing Pedagogical Traits of LLM and Human-Written Code Explanations using Readability, Verbosity, and Semantic evaluation

Sahil Talati, Somayeh Fatahi

Presented by Somayeh Fatahi — WILFRID LAURIER UNIVERSITY, Canada · **on-line**

► session starts 09:50 UTC-4

74 Profile-Driven Adaptive Gamification in CS1: Design and Preliminary Evaluation of an Intelligent Personalized System

Matias Torrealba, Francisco J Gutierrez, Julita Vassileva

Presented by Matias Torrealba — University of Chile · **on-line**

► session starts 07:50 UTC-6

11:20–13:00

Trustworthy & Ethical AI

Chair: Gelayol Golcarenenrenji

49 A Multi-Level Evaluation Framework for Gender Bias in Large Language Models: Directional Bias and Item-Level Stereotyping

Brent Dawson, Alaa Mohasseb, Ella Haig, Gelayol Golcarenenrenji

Presented by Brent Dawson — University of Portsmouth, United Kingdom

145 From Personas to Procurement: A Persona-Driven Framework for Accessible Workplace ICT and Inclusive Employment

Radostina Tsvetkova

Presented by Radostina Tsvetkova — Bulgarian Academy of Sciences, Bulgaria · **on-line**

153 Designing for Trust and Usability: A User-Centered Design Approach for an AI-Powered Accident Reporting Application

Haya Alhodaib, Hatoun Almogherah, Mashal Alkhalifa

Presented by Hatoun Almogherah — King Saud University, Saudi Arabia

58 Development and Validation of an Ethical AI Governance Framework for AI-Assisted Academic Writing in Higher Education: Evidence from Philippine Universities

Carlo Romero, Julius Meneses

Presented by Carlo Romero — National University - Clark Campus, Philippines · **on-line**

► session starts 16:20 UTC+8

87 An Explainable, Reliability-Aware Intelligent Decision Support System for Digital Transformation Risk Prioritization

Alish Nazarov

Presented by Alish Nazarov — Azerbaijan State Oil and Industry University, Azerbaijan · **on-line**

► session starts 12:20 UTC+4

13:00–14:20 Lunch break

14:20–15:20

Intelligent Decision-Making Systems (I)

Chair: Tatyana Radeva-Stoilova

123 ACT-R Cognitive Modeling for Decision Analysis in SCADA-Controlled Environments During Critical Infrastructure Disruptions

Tanya Zapryanova, Tatyana Radeva-Stoilova

Presented by Tanya Zapryanova — Intelligent Systems Department Institute of Information and Communication Technologies Bulgarian Academy, Bulgaria

13 LLM Agents as Feedback Tools for Software Architecture

Ion George Dinu, Marian Cristian Mihăescu, Traian Rebedea

Presented by Ion George Dinu — University of Craiova, Romania

147 Towards a Governed Agentic AI Approach for Assessing the Quality and Reuse Readiness of Tabular Health-Related Data

Agate Jarmakoviča, Arnis Kirshners

Presented by Agate Jarmakoviča — Rīga Technical University, Latvia · **on-line**

15:20–16:20

Digital Health & Bioengineering (I)

Chair: Katharina Wasilew

143 Practical Considerations for Mobile Sensing Systems in Digital Mental Health: Lessons from a Smartphone Typing-Based Sensing Study

Ravishankar Subramani Iyer, Rita Orji, Sandra Meier

Presented by Ravishankar Subramani Iyer — Faculty of Computer Science, Dalhousie University, Canada · **on-line**

► session starts 09:20 UTC-3

48 Towards an Adaptive and Intelligent Dashboard for AI-Driven Clinical Decision Support

Fidelia A. Orji, Arafat Motolani, Grace Ataguba, Frank Rudzicz, Rita Orji

Presented by Fidelia A. Orji — Dalhousie University, Canada · **on-line**

► session starts 09:20 UTC-3

142 NeoWeight: An Explainable Prediction Approach for Neonatal Birth Weight

Sussan Anukem, Grace Ataguba, Evangelos Milios, Rita Orji

Presented by Sussan Anukem — Dalhousie University, Canada · **on-line**

► session starts 09:20 UTC-3

16:30–16:50 Coffee break

16:50–17:40

Telecommunication & Networked Systems

Chair: Vladimir Jotsov

138 AI-Based Algorithm for Flying Ad-Hoc Networks

Denislav Kanev, Petar Trifonov, Vladimir Jotsov, Magdalena Garvanova, Ivan Garvanov, Vladimir Ivanov

Presented by Denislav Kanev — University of Library Studies and Information Technologies, Bulgaria

139 QoS-Aware UAV Fleets for Prioritized IIoT Data Harvesting in Automated Industrial Sites

Mohammed Faizan

Presented by Mohammed Faizan — University of Maryland Baltimore County, United States · **on-line**

► session starts 09:50 UTC-4

7 QueueRecall: Host-Side Issuance Frontiers for RoCE-Class GPU Fabrics

Rohan Bhosle

Presented by Rohan Bhosle — Microsoft, United States · **on-line**

► session starts 06:50 UTC-7

17:40–18:50

Intelligent Decision-Making Systems (II)

Chair: Edita Djambazova

91 A Stochastic Optimization Framework for Semiconductor Product Mix Decisions with Binning and Chiplet Flexibility

Nikhil Vishnu Vadlamudi

Presented by Nikhil Vishnu Vadlamudi — Intel Corporation, United States · **on-line**

► session starts 09:40 UTC-5

159 An Explainable Machine Learning and Optimization Framework for Profitability-Driven E-Waste Refurbishment

Md Saifur Rahman, Nourin Sultana

Presented by Md Saifur Rahman — Central Washington University eRecyclee.org (Founder and Executive Director), United States · **on-line**

► session starts 07:40 UTC-7

109 Machine Learning-Based Optimization of Skyscraper Design to Minimize Vortex-Induced Vibrations

Dhanya Ganesh

Presented by Dhanya Ganesh — Basis Independent Fremont, United States · **on-line**

► session starts 07:40 UTC-7

62 Bridging the Explainability Gap In Digital Marketing: A Structural Equation Model for Transparent Media Mix Modeling

Ashner Novilla, Julita Vassileva

Presented by Ashner Novilla — University of Saskatchewan, Canada · **on-line**

► session starts 08:40 UTC-6

HALL C Odessos HYBRID

11:20–13:00

Machine Learning (I)

Chair: Irina Radeva

75 Energy-Aware INT8 Quantization of BanglaBERT for Offline Edge Deployment

Md. Saiful Islam Mansib, Tayammum A Chowdhury, Mahbub Hasan Prantik, Mohammad Rashedur Rahman

Presented by Mohammad Rashedur Rahman — North South University, Bangladesh · **on-line**

► session starts 14:20 UTC+6

152 BhashaLLM: A QLoRA-Based Framework for Bangla Text Generation and Handwritten Character Recognition

Samiyeel Alim Binaaf, Md. Yeasin Arafat, Atique Shahrier Chaklader, Mohammad Rashedur Rahman

Presented by Mohammad Rashedur Rahman — North South University, Bangladesh · **on-line**

► session starts 14:20 UTC+6

122 Dynamic Domain Routing for Hallucination-Aware Hierarchical Multi-Agent Retrieval-Augmented Generation (RAG): Optimizing the Debater Agent and Guardian Layer for Cross-Domain Consensus Verification

Dr. Jayashree R, Tarun Gowda Pradeep, Suhas Sreenath Iyengar, Shubashitha Gowtham

Presented by Dr. Jayashree R — PES UNIVERSITY, India · **on-line**

► session starts 13:50 UTC+5:30

47 Reporting Scale Prediction in Conflict Event Data Using Machine Learning

Chukwuma Jonathan, Alaa Mohasseb

Presented by Chukwuma Jonathan — University of portsmouth, United Kingdom · **on-line**

► session starts 09:20 UTC+1

89 Privacy-Preserving Sentiment Analysis: A Federated Learning Approach with Uncertainty-Aware Fusion

Babatunde Solomon Jaiyesimi, Dunsin Fatuase, Olufemi Taiwo, Amira Ifori, Akintunde Akinbo, Olumide Olu-Oshadare

Presented by Babatunde Solomon Jaiyesimi — Independent researcher, United Kingdom · **on-line**

► session starts 09:20 UTC+1

13:00–14:20 Lunch break

14:20–16:20

Human-Machine Interaction

Chair: Valentina Terzieva

55 Assisting Blind People at Mealtime Using Plate Detection and Multimodal LLM

Jee-Eun Kim, Kurumi Suzuki, Masahiro Bessho

Presented by Jee-Eun Kim — Toyo University, Japan

24 DiaSense: A Multisensing and Adaptive AI-Driven Persuasive System for Type 2 Diabetes Prevention and Management

Josteve Adekanbi, Joseph Folaji, Olumide Thomas Adeleke, Ibukun Okunade, Rita Orji, Oladapo Oyeboode

Presented by Josteve Adekanbi — Dalhousie University, Canada · **on-line**

► session starts 08:20 UTC-3

3 EnergyWise: A Persuasive and LLM-driven Energy Management System for Climate Change Conservation

Paul Anukem, Grace Ataguba, Fidelia A. Orji, Segun Olatinwo, Rita Orji

Presented by Grace Ataguba — Dalhousie University, Canada · **on-line**

► session starts 08:20 UTC-3

16 Design and User-Centred Evaluation of a Persuasive and Explainable AI App for Health Monitoring

Fidelia A. Orji, Grace Ataguba, Harshil Makwana, Divy Bhavsar, Frank Rudzicz, Rita Orji

Presented by Fidelia A. Orji — Dalhousie University, Canada · **on-line**

► session starts 08:20 UTC-3

25 CookTwin: A Multimodal and Adaptive AI-Assisted Interactive System for Remote Robot-Driven Cooking

Josteve Adekanbi, Babafayofunmi Ayodeji Olutunde, Olayemi Afolabi, Olubunmi Dupe Alabi, Rita Orji, Oladapo Oyeboode

Presented by Josteve Adekanbi — Dalhousie University, Canada · **on-line**

► session starts 08:20 UTC-3

105 Multimodal Sensor Fusion for Human Action Recognition in Human-Robot Interaction: A Systematic Mapping Review of Fusion Reporting

Saminda Wattuhewa, Zhaojie Ju, Dongxu Gao

Presented by Saminda Wattuhewa — University of Portsmouth, United Kingdom · **on-line**

► session starts 12:20 UTC+1

16:30–16:50 Coffee break

16:50–17:40

Smart Cities & Urban Computing

Chair: Yordanka Boneva

101 A Conceptual Framework for Translating Qualitative Real Estate Attributes into Valuation Models

Mariya Ketipova, Lyubka Doukovska, Rumen Ketipov, Radoy Dukovski, Katharina Wasilew

Presented by Mariya Ketipova — Bulgarian Academy of Sciences, Bulgaria · **on-line**

149 An Offline Mobile Framework for Smartphone-Based Soil Texture and Organic Matter Estimation for Crop Suitability Assessment

Hervek K. Kabengele, Alidor Mbayandjambe Masheke, Kevin T. Nguemdjom, Donald Mbouhom, Raphael Kpoghomou, Casimir Ilunga, Ange A. Ntokusi, Esther M. Matendo, Aser K. Itakala, Selain K. Kasereka

Presented by Kevin T. Nguemdjom — University of Kinshasa, Congo (DR) · **on-line**

► session starts 09:50 UTC-4

66 Deep Learning-Based Semantic Segmentation of Buildings from High-Resolution Satellite Imagery for Chattogram Development and No-Development Zones

Tanbir Islam, Mushfiq Azam, Aditi Basu, A.K.M. Muntasir Uddin Shawon, Mohammad Rashedur Rahman

Presented by Mohammad Rashedur Rahman — North South University, Bangladesh · **on-line**

► session starts 19:50 UTC+6

17:40–18:40

Machine Learning (II)

Chair: Yordanka Boneva

19 Large Language Models in Mental Health Support and Psychotherapy Chatbots: Clinical Applications, Evidence Base, Ethical Risks, and Governance Priorities

Shashank Agarwal

Presented by Shashank Agarwal — IEEE, United States · **on-line**

► session starts 10:40 UTC-4

73 Why Formal Monitors Fail: Attack Distribution Entropy as a Coverage Bound for LTL-Based LLM Agent Safety

Ruiyang Zhang

Presented by Ruiyang Zhang — Ryonix Labs, Canada · **on-line**

► session starts 10:40 UTC-4

8 LLM-Augmented Data Engineering Agents for Schema Evolution Handling in Streaming and Batch Pipelines

Akhilesh Rao Meesala, Abhilash Rao Mesala

Presented by Abhilash Rao Mesala — Independent Researcher, United States · **on-line**

► session starts 07:40 UTC-7

09:30–10:00 Registration desk open

10:00–10:40 **Invited Talk — Prof. Guy De Tré · host Lyubka Doukovska · Hall A · Chernob More***Future-Proof Data Management: Making Data Veracity a First-Class Principle*

10:40–11:00 Coffee break

HALL A Chernob More HYBRID

11:00–13:00

Invited Session „Intelligent Agriculture Risk Modeling and Optimization“

Chair: E. Trichkova-Kashamova

42 An Explainable Risk Assessment and Portfolio-Based Resource Allocation Framework for Dairy Farm Management

Elisaveta Trichkova-Kashamova

Presented by Elisaveta Trichkova-Kashamova — Institute of Information and Communication Technologies, Bulgarian Academy of Science, Bulgaria

84 Agricultural Risk Assessment in Bulgarian Farms Based on Semi-Structured Interview

Boriana Vatchova, Yordanka Boneva

Presented by Boriana Vatchova — Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Bulgaria

94 Explainable AI for Smart Agricultural Risk Management Decisions

Yordanka Boneva, Boriana Vatchova

Presented by Yordanka Boneva — Institute of Information and Communication Technologies, Bulgarian Academy of Sciences, Bulgaria

115 Development of a Methodology for Assessing and Analyzing Financial Risk in an Agricultural Enterprise

Stanislav Dimitrov

Presented by Stanislav Dimitrov — Institute of Information and Communication Technologies, Bulgaria

1 A system of key indicators for risk analysis and assessment in agriculture

Kristina Pavlova

Presented by Kristina Pavlova — Institute of Information and Communication Technologies (BAS), Bulgaria · **on-line**

13:00–14:20 Lunch break

14:20–16:20

Intelligent Pattern & Signal Processing

Chair: Ivan Garvanov

31 Enhanced YOLOv12m-Based Infrared Rocket Detection and Tracking with Hybrid Conventional Preprocessing

Muhammed Said Eğilmez, Murat Taskiran

Presented by Muhammed Said Eğilmez — Roketsan Inc., Turkey · **on-line**

► session starts 14:20 UTC+3

51 Explainable Wildfire Detection from Remote Sensing Imagery

Gelayol Golcarenenji, Amanda Peart, Alexander Gegov

Presented by Gelayol Golcarenenji — University of Portsmouth, United Kingdom

46 Vehicle Detection and Damage Identification for Automated Automotive Dataset Creation

Jack Pears, Gelayol Golcarenenji, Alaa Mohasseb, Mohamed Bader-El-Den

Presented by Jack Pears — University of Portsmouth, United Kingdom · **on-line**

► session starts 12:20 UTC+1

23 Hybrid Algorithm for Efficient Real-Time Object Detection and Tracking Using YOLOv3 and GMM

Miroslav Tomov, Magdalena Garvanova, Zdravko Yankov, Ivan Garvanov, Daniela Borissova, Radoslav Yoshinov

Presented by Miroslav Tomov — University of Library Studies and Information Technologies, Bulgaria · **on-line**

80 LAHE enhanced multi-label Ocular Disease Recognition in Fundus Images

Matilde Teixeira, Carolina Silva, Petia Georgieva

Presented by Matilde Teixeira — University of Aveiro, Portugal · **on-line**

► session starts 12:20 UTC+1

36 From SST Forecasting to Marine Heatwave Prediction in the Black Sea

Stoyan Nikolov, Ensiye Kiyamousavi, Boris Kraychev, Vassil Vassilev

Presented by Stoyan Nikolov — GATE Institute, Bulgaria

HALL B Galata HYBRID

11:00–12:20

Intelligent Cybersecurity

Chair: Alexander Gegov

70 Causal Reasoning Framework for 6G Network Security

Koycho Georgiev, Alexander Gegov, Hamidreza Khaleghzadeh, Mo Adda, Eirini Kanaki, Periklis Chatzimisios, Aikaterini Kanta

Presented by Koycho Georgiev — University of Portsmouth, Bulgaria · **on-line**

102 The Cybersecurity Insurance: Beyond the Risk Transfer

Rumen Ketipov, Lyubka Doukovska, Mariya Ketipova, Atanas Dukovski, Georgi Markov, Ivan Draganov

Presented by Rumen Ketipov — Bulgarian Academy of Sciences, Institute of Information and Communication Technologies, Bulgaria · **on-line**

146 Trustworthy Digital Evidence in Distributed Cloud Environments: A Survey and Research Directions for Policy-Driven SpiderNet

Neelum Raffique, Mo Adda, Bander Alrimy, Aikaterini Kanta, Nancy Scheidt

Presented by Neelum Raffique — University of Portsmouth, United Kingdom · **on-line**

► session starts 09:00 UTC+1

85 Adversarial Robust Spacecraft Navigation AI: A Framework of Multi-layer Multi-explicit Defense

Prathamesh Shinde, Vrushabh Salunke, Manoj Rohokale, Satwik Shirsat, Prof. Jyoti More

Presented by Prathamesh Shinde — Dr. D. Y. Patil Institute of Technology, Pimpri, Pune, India · **on-line**

► session starts 13:30 UTC+5:30

12:20–13:00

Energy & Power Systems

Chair: Tatyana Radeva-Stoilova

136 Simulation-Based Performance Assessment of a 400 kWp Grid-Connected Photovoltaic Power Plant Using PVsyst: A Case Study from Bulgaria

Iliya Kolarov, Tatyana Radeva-Stoilova

Presented by Iliya Kolarov — Intelligent Systems Department Institute of Information and Communication Technologies Bulgarian Academy, Bulgaria

137 Experimental Investigation and 3D FEM Analysis of the Thermal Field in a Single-Pole Power Distribution Terminal Block

Ivan Hadzhiev, Ekaterina Ivanova, Georgi Dobrev

Presented by Ivan Hadzhiev — Technical University of Sofia, Plovdiv Branch, Bulgaria

13:00–14:20 Lunch break

14:20–15:35

Explainable AI (XAI)

Chair: Ivan Lambov

119 GLAD: GLoBal-features Active Disentangler for Self-Explainable Tabular Data Learning

Emanuel Covaci, Fabian Galiş, Radu Balan, Daniela Zaharie, Darian Onchis

Presented by Fabian Galiş — West University of Timisoara, Romania · **on-line**

► session starts 14:20 UTC+3

71 Frugal and interpretable timeseries anomaly detection with Adaptive N-HiTS

François Xavier Sikounmo, Alexandre Benoit, Mickael Bettinelli, Olivier Passalacqua

Presented by François Xavier Sikounmo — LISTIC, Pfeiffer-Vacuum, France

► session starts 13:20 UTC+2

32 Risk-Controlled AML Triage Under Temporal Drift on the Elliptic Bitcoin Transaction Graph

Joel Chapman, Jeremiah Owolabi, Hamidreza Khaleghzadeh

Presented by Joel Chapman — University of Portsmouth, United Kingdom · **on-line**

► session starts 12:20 UTC+1

113 Explainable Anomaly Classification of Generated Aviation Safety Clarifications Using LIME, SHAP, and Counterfactual Explanations

David Musinguzi, Alexander Gegov, Gelayol Golcarenenrenji, Mo Adda

Presented by David Musinguzi — University of Portsmouth School of Computing, United Kingdom · **on-line**

► session starts 12:20 UTC+1

88 EXPLAIN-SOC: An Explainable Graph-Driven Framework for Threat Attribution and Security Operations Center Automation

David Onoja, Chijioke Okoye, Kemisola Adalumo, Akintunde Akinbo, Taiwo Akinbolaji, Brian Aboze, Godswill Chukwu, Ololade Anthonia Amidu

Presented by David Onoja — Independent researcher, United Kingdom · **on-line**

► session starts 12:20 UTC+1

15:35–16:20

Internet of Things

Chair: Edita Djambazova

128 Heterogeneous Edge AI: Robust Decentralized Federated Learning across Devices

Achref Rihani, Aftab Hussain, Alois Ferscha

Presented by Achref Rihani — Johannes Kepler University, Austria

► session starts 14:35 UTC+2

114 SNN-NeuroEdge: Federated Continual Learning on Neuromorphic Edge

Aftab Hussain, Alois Ferscha

Presented by Aftab Hussain — Johannes Kepler University Linz, Austria

99 Mission-Phase-Aware Deterministic TinyGRU Inference: A Distilled, Static-Memory INT8 Framework for Real-Time Activity-Log Classification on Microcontrollers

Tavishi Gupta, Samridhi Shreya, Risu Kumari Nayak, Prajwala T R

Presented by Tavishi Gupta — Department of Computer Science and Engineering, PES University, Bengaluru, India · on-line

► session starts 18:05 UTC+5:30

HALL C Odessos HYBRID

11:00–12:00

Knowledge Representation & Reasoning

Chair: Guy De Tré

69 A Vectorized GPU Implementation of the Self-Organizing Multi-Stage Selection Procedure

Angel Marchev Jr., Darin Ivanov

Presented by Angel Marchev Jr. — University of National and World Economy, Bulgaria

20 User Profile Fragmentation and Fusion in Personalized Systems: A Survey of Approaches, Challenges, and Future Directions

Mahe Rammeh, Nizar Omheni, Ahmed Hadj Kacem

Presented by Mahe Rammeh — Faculty of Economics and Management of Sfax (FSEGS), Tunisia · on-line

► session starts 09:00 UTC+1

93 Conflict-Aware RAG Routing: Balancing Cost and Accuracy via Context Contradiction

Dang Phuong Nam, Tran Huy Tuan, Doan Duy Long, Cao Van Mai

Presented by Dang Phuong Nam — FPT University, Viet Nam · on-line

► session starts 15:00 UTC+7

12:00–12:40

Bio-Inspired & Evolutionary Intelligence

Chair: Valentina Terzieva

150 Generalized Genomic Networks with Flows on Arcs and Vertices

Lyubka Doukovska, Vasil Sgurev

Presented by Lyubka Doukovska — IICT – Bulgarian Academy of Sciences, Bulgaria

155 The Tri-Lineage Competition Network: A Tristable Model of Neural Stem Cell Fate

Draga Toncheva, Vasil Sgurev

Presented by Draga Toncheva — Department of Biological Sciences, Bulgarian Academy of Sciences, Bulgaria

13:00–14:20 Lunch break

14:20–15:20

Industrial & Manufacturing Systems

Chair: Tatyana Radeva-Stoilova

125 Corrosion, a Global Problem in the Operation and Maintenance of Wastewater Treatment Plant Facilities

Ivaylo Zafirov, Tatyana Radeva-Stoilova

Presented by Ivaylo Zafirov — Intelligent Systems Department Institute of Information and Communication Technologies Bulgarian Academy, Bulgaria · **on-line**

124 Predictive Modelling of Soil Water Retention Curves Using Machine Learning Methods

Jennifer Yche Mordi, Farzad Arabikhan, Arash Azizi, Alireza Tatari, Benyamin Ebrahimpour, Gelayol Golcarenenrenji

Presented by Farzad Arabikhan — Univerisity of Portsmouth, United Kingdom · **on-line**

► session starts 12:20 UTC+1

141 How Many Advisors Are Enough? Predicting Useful Majority-Vote Ensemble Size under Correlated Decision Errors

Ahsan Habib Shihab, Aman Mussa, Madina Mansurova

Presented by Ahsan Habib Shihab — Al-Farabi Kazakh National University, Kazakhstan · **on-line**

► session starts 16:20 UTC+5

15:20–16:20

Intelligent Control & Measurement

Chair: Tatyana Radeva-Stoilova

86 Intelligent Optimization of Polarization Sampling in Rotating Polarization Wave via Multitask Deep Learning for IoT Applications

Youssef Alaa Abou Almagd, Muhammad Moazzam Ali, Muhammad Adnan, Muhammad Akmal Chaudhary

Presented by Youssef Alaa Abou Almagd — Communication and Information Engineering, University of Science and Technology, Egypt · **on-line**

► session starts 15:20 UTC+3

140 Intelligent Tuning of PID Controllers Based on AI Agents and LLM Models Applied to a Water Distribution System

Laís Manguiera, Juan Villanueva, Gabryel Martins Raposo de Alencar, Ivanovitch Medeiros D. da Silva

Presented by Gabryel Martins Raposo — Federal University of Paraiba, Brazil · **on-line**

► session starts 09:20 UTC-3

108 Safe Virtual Coupling Under Adhesion Loss: Embedding Backward-Reachable Sets in MPC

Mehdi Zangeneh, Qusay Hawari, Peter Hubbard, James Fleming

Presented by Mehdi Zangeneh — Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University, United Kingdom · **on-line**

► session starts 13:20 UTC+1

19:30

Conference Dinner · Restaurant „Cherno More“

09:30–10:00 Registration desk open

10:00–10:40 **Invited Talk — Prof. Alexander Gegov · host Lyubka Doukovska · Hall A · Chernobyl***Explainable Artificial Intelligence: A Surrogate Modelling Approach*

10:40–11:00 Coffee break

HALL A Chernobyl HYBRID

11:00–12:00

Education & Intelligent Tutoring

Chair: Valentina Terzieva

56 Quizzi: Automatic Quiz Generation via Iterative BERT Fine-Tuning

Darius-Robert Diculescu, Paul Stefan Popescu, Marian Cristian Mihăescu

Presented by Darius-Robert Diculescu — University of Craiova, Romania

57 Multi-Task Intent and Difficulty Classification for a Romanian Programming Chatbot for Children: A BERT Approach

Andreea-Roxana Lețu, Paul Stefan Popescu, Marian Cristian Mihăescu

Presented by Andreea-Roxana Lețu — University of Craiova, Romania

58 Developing Intelligent Learning Assistants: Automatic Identification of Research Paper Structure via Fine-Tuned BERT Models

Monica Emilia Văruicu, Paul Stefan Popescu, Marian Cristian Mihăescu

Presented by Monica Emilia Văruicu — University of Craiova, Craiova, Romania

54 EasyBio AR: Integrating 3D Augmented Reality into Biology Education — A Unity-Vuforia Approach

Anika Hossain, Mohsin Mullik, Abu Huraira, Mohammad Rashedur Rahman

Presented by Mohammad Rashedur Rahman — North South University, Bangladesh · **on-line**

► session starts 14:00 UTC+6

11:00–12:00

Digital Health & Bioengineering (II)

Chair: Katharina Wasilew

72 Application of InterCriteria Analysis for Evaluating Factors Influencing Quality of Life after Rehabilitation in Patients with Hemorrhagic Stroke

Bistra Zaharieva, Lyubka Doukovska, Lyubomira Encheva

Presented by Bistra Zaharieva — IIKT Ban, Bulgaria · **on-line**

160 MultiFusion AI Agent: An AI-Powered Multilingual Virtual Receptionist for Healthcare Appointment Automation

Swapnil Gulbhile

Presented by Swapnil Gulbhile — Vishwakarma Institute of Technology (VIT), Pune, India · **on-line**

► session starts 13:30 UTC+5:30

60 Exploring Telesurgery-Related Content on Video-Sharing Platforms: Public Engagement and Sentiment Analysis

Samer Muthana Sarsam, Ahmed Isam Al-Hatem, Abdul Samad Shibghatullah, Lubna A. Hussein

Presented by Samer Muthana Sarsam — School of Management, Coventry University, United Kingdom · **on-line**

► session starts 09:00 UTC+1

68 Predicting Dengue Severity and ICU Admission: An Interpretable Machine Learning Approach Using Integrated Clinical, Behavioural, and Environmental Data

Otuekongabasi Umoudoh, Nasreen Anjum, Mahreen Kiran, Mahreen-Ul Hassan

Presented by Otuekongabasi Umoudoh — University of Portsmouth, United Kingdom · **on-line**

► session starts 09:00 UTC+1

11:00–12:00

Intelligent Transportation Systems

Chair: Yordanka Boneva

10 Intelligent Urban Parking Management System

Kristina Pavlova, Yordanka Boneva

Presented by Kristina Pavlova — Institute of Information and Communication Technologies (BAS), Bulgaria · **on-line**

14 CausalDrive: Causal Reasoning Supervision for Interpretable Vision-Language-Action Driving

Xiuyuan Yu, Zuwei Lin, Chongxiao Liu, Zicheng Zhou, Fan Zhang

Presented by Xiuyuan Yu — University of Sussex, United Kingdom · **on-line**

► session starts 09:00 UTC+1

78 Budgeted and Fair Incentive Allocation for Route Choice in Mobile Urban Sensing: A Comparative Evaluation of Heuristic, Greedy, and UCB-Style Mechanisms

Daniel Mutembesa, Filipe Miguel Gonçalves de Almeida, Engineer Bainomugisha

Presented by Daniel Mutembesa — Makerere University, Uganda · **on-line**

► session starts 11:00 UTC+3

79 Randomised Controlled Evaluation of Incentive Mechanisms for Route-Choice Pricing in Mobile Urban Sensing

Daniel Mutembesa, Filipe Miguel Gonçalves de Almeida

Presented by Daniel Mutembesa — Makerere University, Uganda · **on-line**

► session starts 11:00 UTC+3

12:00–12:15 Closing of IS'26 · Hall A · Chernomore

Practical information

DATES	Thursday 03 — Saturday 05 September 2026
VENUE	Hotel Chernomorec bul. Slivnitsa 33, Varna, Bulgaria
REGISTRATION	Please register at the reception desk in the conference centre.
FORMAT	On-site and online sessions Online participants receive their joining details by e-mail.
QUESTIONS	ieee-is@bas.bg

The conference site

Venue, travel, committee, fees and registration



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