

RaTSiF-2026

The 49th Research and Technology – Step into the Future Conference

Agenda

Date: 24th April 2026

Time: 10:00 – 17:00

Location: Transport and Telecommunication Institute

Link to plenary session: <https://meetings.tsi.lv/b/jel-gpi-j8a-3eu>



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PLENARY SESSION

Aud. 130

Moderators:	Assoc. Prof., Dr.sc.ing. Evelina Budilovich Prof., Ph.D. Emmanuel Merchan	
10:00 – 12:00	Welcome Speech	Dmitry Pavlyuk , Dr.sc.ing., Professor, Vice-Rector for Research and Innovation, TSI (Latvia)
	How Large Language Models Transform the Academic Lecture: Evidence, Risks, and Design Alternatives	Boriss Misnevs , Dr.sc.ing., Professor, TSI, (Latvia)
	The Beauty of Complex-Valued Geometry and Arithmetic — Interactive Visualizations Powered by AI	Anatoly Ressin , Ph.D candidate, Researcher, TSI, (Latvia)
	An Uninvited Systemic Force: Bitcoin's Volatility Spillovers across European Financial Markets	Nijat Masmaliyev and Mehemed Maharramov Ph.D candidates, Researchers, TSI, (Latvia)
	Pros and Cons of Higher Education in Preparing Professionals for Digitalisation and Corporate Transparency	Ferangiz Abdurakhmonova , Ph.D candidate, Researcher, TSI, (Latvia)

Parallel Session

SESSION #1_Part 1 (Aud. 130)

Link to Session 1_Part 1: <https://meetings.tsi.lv/b/jel-6lb-vks-irx>

Online: Only for Distant Learning Students

12:30 – 17:00		
COMPUTER PROBLEMS OF THE INFORMATION SOCIETY AND THE MODERN ELECTRONICS INFORMĀCIJAS SABIEDRĪBAS DATORIZĀCIJAS PROBLĒMAS UN MŪSDIENU ELEKTRONIKAS PASAULE		
Moderators:	Prof., Dr.sc.ing. Dmitry Pavlyuk Prof., Dr.sc.ing. Boriss Misnevs	
12:30 – 14:30	A Hybrid Transformer-Based Approach for Misinformation Detection in Low-Resource Language Contexts	Vita Maurite
	Enhancing Forest Inventory Data Quality Using Machine Learning	Sanita Šulca
	Reinforcement Learning for Dynamic E-Bike Repositioning: A Simulation Study Using Divvy Bikeshare Data	Thomas Goniakowski, Arnaud Muscat, Jade Lopes and Usman Alabi
	Mental Health and Sport Participation: A Comparative Dashboard Analysis of France and Latvia	Houssam Ighoud, Teo Bernard, Eric Li and Paul Langlois
	The Computer Vision-Based Analysis of Irregular Box Arrangements in Palletized Logistics Systems	Joanns Engels
	Reconstruction of Panoramic and Spherical Images in Fixed Omnidirectional Multi-Camera Systems	Alexandre Borges, Enzo Depre, Loïc Morin, Mathys Haubert
	Integrating Machine Learning with Economic Theory for Trade Tariff Forecasting – An Empirical Analysis	Ranjith Radhakrishnan <i>online</i>
14:30 – 14:45	Break	
Moderators:	Prof., Dr.sc.ing. Irina Pticina Prof., Dr.sc.ing. Boriss Misnevs	
	Sequential Decision Making for Vessel Rotation Planning in Maritime Ports Using Proximal Policy Optimization	Maksims Dorozko
	Voice-Activated Spatial Control for Collaborative Robotics: A UR3 Implementation	Godefroy Lecluse, Andy Ramarokoto, Ali Bilal Taze, Mohamed

14:45 – 17:00		Bedwey and Chris-Vital Tampwo
	A Data-Driven Comparison of Machine Learning Models for Predicting Employee Attrition Intention	Durga Bhavani Visalakshi Joga
	Interview Intelligence: Design and Implementation of a Multimodal AI-Based Recruitment Evaluation System	Toufic Jandah
	An Empirical Analysis of Technical Debt in Open-Source Machine Learning Repositories	Vidhumol Pandippilly Antony
	Lightweight Temporal Deep Learning Model for Real-Time American Sign Language Recognition	Tresa Joby Thommasseri Antony
	AI-Augmented Scaffolding in Programming Education	Tolomey Enock Bogninou <i>online</i>

Parallel Session

SESSION #1_Part 2 (Aud. II)

Link to Session 1_Part 2: <https://meetings.tsi.lv/b/jel-d74-c74-d8z>

Online: Only for Distant Learning Students

COMPUTER PROBLEMS OF THE INFORMATION SOCIETY AND THE MODERN ELECTRONICS INFORMĀCIJAS SABIEDRĪBAS DATORIZĀCIJAS PROBLĒMAS UN MŪSDIENU ELEKTRONIKAS PASAULE		
12:30 –17:00		
Moderators:	Prof., Ph.D. Ekaterina Gromova Prof., Dr.sc.ing. Aleksandrs Grakovkis	
12:30 –14:30	Balancing Novelty and Control in Generative Dance Models	Grace Searle
	Hybrid Structural–Attribute Anomaly Detection in Social Network Graphs	Andrejs Babkins
	Data-Driven Prediction and Analysis of Cooling Energy Use in Telecom Central Office Environments	Anastasija Zubkova
	Green AI Framework: Neural Network-Based Cache-Aware Prompt Optimization for Energy-Efficient LLMs	Jeļena Picilēviča
	Testing Framework for Crossplane Compositions in AWS Environments	Riyad Ilyasov
	Machine Learning - Based Predictive Analytics in Transfer Pricing	Sandra Usane
	Heterogeneous Graph Neural Networks for User Journey Modelling: A Comparative Study with Sequential and Probabilistic Approaches	Dmitrijs Gizdevans
	Job Market Skill Demand Analysis and Skill-Based Course Recommendation Framework	Amil Thomas
14:30 – 14:45	Break	
	Adaptive Spline Smoothing for ADS-B Aircraft Trajectories	Nikita Mickevics
	Time Series Forecasting Algorithms for Financial Profit Margin Prediction in the E-Commerce Sector	Mostafa Ahmed Shaaban Ahmed Salem
	Creating A High Performance Agent Based Traffic Simulator Using C++	Leon Stansfield

14:45 – 17:00	A Data-Driven Comparison of How Junior and Senior Developers Use Natural Language to Generate React Components	Athira Allaveedu Ashok
	Game-Theoretic Feature Attribution for Stable and Interpretable Ensemble Credit Models	Anjali Shibu
	Design of a Battery-Integrated Carrier Board for Raspberry Pi Compute Module 5 in Next-Generation Flexmesh Networking Nodes	Matthew Wood
	Intraoperative Cardiac Arrest Prediction Using Temporal Attention Networks: A Multi-Window Analysis of VitalDB	Sachu Mon Puthenpuraickkal Sajeew
	Secure IoT Monitoring Platform: A Containerised Approach to Authenticated Environmental Sensing	Kaan Karadag
	Hyperspectral Reconstruction of Optical Images	Eduard Matosov

Parallel Session

SESSION #1_Part 3 (Aud. III)

Link to Session 1_Part 3: <https://meetings.tsi.lv/b/jel-ztu-odz-huv>

Online: Only for Distant Learning Students

COMPUTER PROBLEMS OF THE INFORMATION SOCIETY AND THE MODERN ELECTRONICS INFORMĀCIJAS SABIEDRĪBAS DATORIZĀCIJAS PROBLĒMAS UN MŪSDIENU ELEKTRONIKAS PASAULE		
12:30 –17:00		
Moderators:	Assoc. Prof., Dr.sc.ing. Nadezhda Spiridovska Assoc. Prof., Dr.sc.ing. Samuel Moveh	
12:30 –14:30	Designing Adaptive Game Bosses for Player 'Flow' Using Deep Reinforcement Learning	Mahamad Mroueh
	Conceptual Model of Information System for Management of Maritime Operations	Aleksandra Baltace
	A Framework for Evaluating the Efficiency of Cloud Implementation in Asian SMEs	Pawani Manjitha
	Reanalysis of Extreme Coastal Flood Levels at Greendale Barn Farm, Barnstaple	Oliver Goody
	Improving Data Reliability in Inter-Organizational Information Systems through Data Standardization in Social Services	Daņiils Urbans
	Framework for Optimizing Software Testing Using Artificial Intelligence in Agile Development Environments	Chathuki Withana Arachchige
	Physics-Informed Neural Network for Joint Estimation of Carrier Frequency Offset and IQ Imbalance from Raw IQ Signals	Yury Volzhanin
	Development of an AI-Based Virtual Assistant for Learning Mathematics in Grade 6	Aleksandrs Plotnikovs and Daniels Abalihins
14:30 – 14:45	Break	
	Real-Time 3D Outdoor Localization Using UWB, GNSS, and IMU Fusion with Deep Learning	Pramod Geevinda Sandaruwan Wijendra Gamladdalage
	Using Myoelectric Sensors with a Robotic Sixth Finger to Enhance the Human Hand	William Falvey

14:45 – 17:00	Intelligent Fault Detection System for Industrial Motors Using Embedded Systems and Machine Learning Approach	Ananthu Mohan
	Automating Design Evaluation in BIM - A Plugin Based Compliance Tool for Navisworks	Jack Thatcher
	Security Risk Assessment Analysis of AI-Powered CRM Systems	Kelechukwu Agnes Iloghalu
	Effect of Ceramic Firing Temperature on the Electrochemical Performance and Restart Behavior of Tubular Microbial Fuel Cells	Tom Jackson
	Optimising the Design of Microbial Fuel Cells for Ease of Assembly as an Educational Tool	Max Smith
	AI-Based Predictive Maintenance of Offshore Wind Turbine Electrical Systems Using SCADA Data	Olegs Timofejevs <i>online</i>

Parallel Session

SESSION #2 (Aud. 222)

Link to session 2: <https://meetings.tsi.lv/b/jel-bsa-6xt-xpo>

Online: Only for Distant Learning Students

12:30 – 16:00		TRANSPORT AND LOGISTICS TRANSPORTS UN LOĢISTIKA
Moderators:	<p>Prof., Dr.sc.ing. Iyad Alomar Asst. Prof., Ph.D., Berdymyrat Ovezmyradov</p>	
12:30-16:00	Digital Transformation of African Aviation Infrastructure: Strategic Opportunities for Africa–Europe Economic Cooperation	Meruvie Victor Iteheri
	The Effect of Sustainable Development Goals (SDGs) on Employees' Satisfaction with Reference to Riga International Airport – Latvia	Pathirana Kulathilakage Isuru Madhushanka
	Privatisation Models for an International Airport	Maksimillian Pogiba
	A Systems-Based Investigation of Maintenance and Inspection Errors in Aviation MRO Operations: Evidence from Tunisair Technics	Abderrahman Kaissi
	The Impact of Psychological Capital, Work Engagement and Job Burnout on Cabin Crew Service Recovery Performance	Khanh Huyen Vo <i>online</i>
	Strategic and Sustainability Implications of Starlink in Flight Connectivity in Commercial Aviation: A Passenger Centric Analysis	Edvinas Titovecas <i>online</i>
	Crisis Management in Italian International Airports	Emanuele Stanislav Marzoli <i>online</i>

Parallel Session

SESSION #3 (Aud. 221)

Link to session 3: <https://meetings.tsi.lv/b/jel-0kx-pvi-jcy>

Online only for Distant learning students

12:30 – 17:00 MARKET: RESEARCH, PROJECTS, TECHNOLOGIES AND PROBLEMS OF THE MODERN ECONOMY AND BUSINESS TIRGUS: PĒTĪJUMI, PROJEKTI, TEHNOLOĢIJAS UN MŪSDIENU EKONOMIKAS UN BIZNESĀ PROBLĒMAS		
Moderators:	Prof., Dr.oec. Irina Kuzmina-Merlino Prof., Dr.oec. Inna Stecenko	
12:30 – 14:30	Validating an Ethical AI Scorecard for Stakeholder Trust in Financial Services	Mehak Gupta
	The Role of Migrant Turkish Women In the Labor Market In Latvia and Finland	Pervin Doğan
	The Impact of Sales Promotion Strategies on Purchase Intention of Generation Z Consumers in the Apparel Retail Industry of India	Athul Anilkumar Swapna
	Employee Perception of Employee-Focused Corporate Social Responsibility: A Study among Banking Sector Employees	Ashker Hussain
	AI-Powered Marketing in the Food Retail Industry	Mangala Vishwanath Subasinghe BM
	Algorithmic Management as a Mechanism of Digital Business Transformation in the Service Economy: Evidence from India	Naseeb Kattukandathil
	Education for Sustainability in African Enterprises: A Review of Corporate Learning Strategies for Green Competency Development	Etian Boress Kemgou Voptia <i>online</i>
14:30 – 14:45	Break	
	Real-Time Cost Prediction Model for Freight Transport Operations	Ridma Sanka Jayathunga Kamkanamge
	Impact of Gamified Performance Appraisal on Employee Engagement in Start-Ups	Athira Vayalamkandi

14:45 – 17:00	Promoting an Organisation’s HR Policy for Implementing Warehouse Automation in Latvia	Damindu Jayasuriya
	A Comparative Analysis of Fast-Moving Consumer Goods Market Resilience in Latvia during 2019-2023	Marija Siliņa
	The Role of Enterprise Resource Planning (ERP) Systems in Digital Procurement Processes: A Systematic Literature Review	Tharushika Prabhathi Ethdath Waduge
	Improving Employee Engagement in the Hospitality Industry	Alma Celine
	Enhancing Agricultural Monitoring in Azerbaijan Using Remote Sensing as a Proxy for Drone Technologies	Sadat Alizada <i>online</i>
	Kudumbashree and the Development of Women Entrepreneurship: A Business Perspective from Kerala	Akshai Karottunalunnel Shaji <i>online</i>