



Program of The 40th Conference of Open Innovations Association FRUCT

Helsinki, Finland

4 - 6 November 2026



**GAUDEAMUS IGITUR,
JUVENES DUM SUMUS!
POST JUCUNDAM JUVENTUTEM,
POST MOLESTAM SENECTUTEM
NOS HABEBIT HUMUS.**

**UBI SUNT, QUI ANTE NOS
IN MUNDO FUERE?
VADITE AD SUPEROS,
TRANSITE AD INFEROS,
UBI JAM FUERE.**

**VITA NOSTRA BREVIS EST,
BREVI FINIETUR,
VENIT MORS VELOCITER,
RAPIT NOS ATROCITER,
NEMINI PARCETUR.**

**VIVAT ACADEMIA,
VIVANT PROFESSORES!
VIVAT MEMBRUM QUODLIBET,
VIVANT MEMBRA QUÆLIBET!
SEMPER SINT IN FLORE!**

**VIVANT OMNES VIRGINES
FACILES, FORMOSÆ!
VIVANT ET MULIERES,
TENERÆ, AMABILES,
BONÆ, LABORIOSÆ!**

**VIVAT ET RESPUBLICA,
ET QUI ILLAM REGIT!
VIVAT NOSTRA CIVITAS,
MAECENATUM CARITAS,
QUÆ NOS HIC PROTEGIT**

**PEREAT TRISTITIA,
PEREANT DOLORES,
PEREAT DIABOLUS,
QUIVIS ANTIBURSCHIUS,
ATQUE IRRISORES**

Practical Information

All FRUCT40 presentations are pre-recorded by the authors and uploaded to Youtube. The conference program contains links to individual presentations and playlists of all talks for each session. All conference sessions consist of two modules:

- 1) **Self-watching of the presentations on Youtube.** You are welcome to use the advantages of online participation and freely manage your time. You can ask questions in the comments of the videos. Please subscribe to the FRUCT youtube channel as it will help us to organize video streaming in the future.
- 2) **Please join the Questions and Answers (Q&A) in MS Teams.** You can use MS Teams either locally installed or web version. Please use the corresponding Teams links. Please use your real name at the registration and we will immediately approve the request to connect. Please, make sure to mute your microphone. If you have any questions, please click on a button with the hand (Raise hand button), so the chairman can easily manage the session. We recommend joining a Teams session in audio mode (without video). Please prepare your questions/comments to the authors and use this time to discuss the presented works.

The conference time is Finnish time EET (UTC+2). The MS Teams links are published in the conference program. You are welcome to watch video presentations in advance. Please note that all online presentations will be available starting on Monday, November 2, 2026. If you have any further questions don't hesitate to email us at info@fruct.org.

Authors of the selected conference papers get an invitation to publish an extended version of the paper in our partner journals. If you are interested in this opportunity, please express it clearly to the chair of your session.

The proceedings of 40th FRUCT conference are available online:

Issue 1: <https://fruct.org/publications/fruct40/>

Issue 2: <https://fruct.org/publications/acm40/>

General Facts and Statistics for the 40th FRUCT Conference:

Total submissions: **85**

Total authors: **112**

Accepted Full Papers: **35**
representing **17** countries

Acceptance rate: **41%**

Organization Committee of the 40th FRUCT conference

Conference Chair: Sergey Balandin

Publishing team leader: Tatiana Shatalova

Program Committee

Amol Agade	Raymond Lazarus	Andrew Ponomarev
Gaurav Agrawal	Dmitry Levshun	Abdelhadi Raihani
Guntis Arnicans	Deepak Kumar Lnu	Ankush Rastogi
Archana Atreya	Anton Makarov	Sri Krishna Ravulapalli
Sandeep Batchu	David Malone	Alex Romanova
Olga Bogoiavlenskaia	Anna Maltseva	Arijit Roy
Veera Venkata Ramana Murthy Bokka	Sekhar Manda	Joyjit Roy
Paolo Castaldi	Peter Mandl	Farzaneh Saadati
Ceres Dbritto	Alexandrov Mikhail	Manojit SahaSardar
ShivaKrishna Deepak	Arpit Mittal	Ravi Sambangi
Mario Döller	Gaurav Naresh Mittal	Liudmila Shchegoleva
Adam Dudáš	Shubhra Mittal	Tatiana Sherstinova
Albeiro Espinal	Nissan Modi	Nikolay Shilov
Bhooshan Ravikumar Gadkari	Venkateswarlu Mullangi	Alexander Smirnov
Madhu Garimilla	Vikram Nafria	Gennadii Smorodin
Venkata Raja Ravi Kumar Gelle	Dmitry Namiot	Manfred Sneps-Sneppe
Alexander Geyda	Nandish Nanjappa	Sergey Staroletov
Oleg Golovnin	Gautam Nandkishore Nayak	Rajkumar Sukumar
Marco Grossi	Anand Nayyar	Abrar Ahmed Syed
Christopher Harris	Marina Nikitina	Sandeep Tamrakar
Amit Jaiswal	Valentin Olenev	Nikolay Teslya
Harsh Jangid	Abhishake Reddy Onteddu	Bijoy Thomas
Saiteja Jonnalagadda	Michele Pagano	Mahalakshmi Ranga Prasad Thota
Aakanksha Joshi	Thiyagarajan Palaniyappan	Chaitanya Tumma
Alexey Kashevnik	Sridevi Palepu	Timofey Turenko
Ömer Korçak	Sathyananda Kumar Pamarthy	Prudhvi Uppaluri
Dmitry Korzun	Ayush Pandey	Venkata Sudha Rani Vadigina
Kirill Krinkin	Jozef Papán	Anand Kumar Vedantham
Andrey Kuzmin	Ilya Paramonov	Ranga Rao Venkatesha Prasad
Miroslav Kvassay	Gaurav Patel	Letian Xu
Marek Kvet	Edison Pignaton de Freitas	Naga Satya Praveen Kumar Yadati
Michal Kvet	Lidia Pivovarova	Victor Zappi
Ksenia Lagutina	Vivek Kumar Polurouthu	Mark Zaslavskiy

Program of the 40th FRUCT conference

3-6 November 2026, Helsinki, Finland

NOTE: Conference time is Finnish time (UTC+2)

DATE	TIME	PROGRAM
03.11.26	14:30-15:00	Registration to the 40th FRUCT conference
	15:00-18:00	Onsite FRUCT WG meeting (by invitation only)
04.11.26	10:45-11:00	Registration to the 40th FRUCT conference
	11:00-11:10	Opening of the 40th FRUCT conference
	11:10-12:00	Keynote talk: Rational Escape: Why AI Agents Break Out of Sandboxes, by Ondřej Rozinek, Czech Technical University in Prague
	12:00-13:45	Online/Onsite session: Artificial Intelligence and Machine Learning I
	13:45-14:30	Lunch break
	14:30-15:40	Online/Onsite session: Computer Vision, Image and Video Processing I
	15:40-17:10	Online session: Innovative Services and Solutions
	18:00-21:00	FRUCT40 Meetup in Helsinki
05.11.26	10:00-11:30	Online session: Artificial Intelligence in Text Analysis and Generation
	11:30-12:40	Online session: Computer Vision, Image and Video Processing II
	12:40-13:30	Lunch break
	13:30-15:00	Online session: Artificial Intelligence and Machine Learning II
	15:00-16:30	Online session: Security and Privacy: Applications and Coding Theory
06.11.26	10:00-10:50	Online session: Internet of Things and Enabling Technologies
	10:50-12:00	Online session: The 13th DataWorld Workshop
	12:00-12:15	Official closing of the 40th FRUCT conference

MS Teams links:

November 4, 2026 (Wednesday):

<https://teams.microsoft.com/meet/3388651209480706?p=ZL4K64Uv1r9UHPTOlS>

November 5, 2026 (Thursday):

<https://teams.microsoft.com/meet/3237360613400699?p=tbl5UgPJKyegXWYhSl>

November 6, 2026 (Friday):

<https://teams.microsoft.com/meet/3972630313475630?p=RkKxpHRS5qqoHuhycO>

Thank you and we are looking forward to see you at the 41st FRUCT on May 26-28, 2027!

Program of the 40th FRUCT conference

November 4 (Wednesday), Online/Onsite participation

NOTE: Conference time is Finnish time (UTC+2)

Online Session: Opening and Plenary session of the 40th FRUCT conference		Chairman: Sergey Balandin
11:00	5m	Welcome addressing and practical information for the participants of the 40th FRUCT conference , by Sergey Balandin
11:05	40m	Keynote talk: Rational Escape: Why AI Agents Break Out of Sandboxes , by Ondřej Rozinek, Czech Technical University in Prague
11:45	10m	Q&A for the Keynote talk
11:55	5m	Break
Online/Onsite Session: Artificial Intelligence and Machine Learning I		Chairman: Andrew Ponomarev
Playlist: https://www.youtube.com/watch?v=qF8WpH9fall&list=PLGgCZgDSORgk		
12:00	65m	Classification of Suspicious Microcalcification Clusters: Applying Vision Transformers and Mammography-Specific Pretraining , by Aneta Gábrišová, Ivan Cimrák, Marek Planieta Intelligent Analysis of EEG Data for Attention Concentration and Mind Wandering Classification , by Alexey Kashevnik Convolutional Neural Networks and Vision Transformers for Patch-based Mammography Classification: the Role of Preprocessing, Spatial Context and Pretraining , by Aneta Gábrišová, Ivan Cimrák, Michal Pavlov Effects of Send-on-Delta Sampling on Federated Human Activity Recognition , by Pranav Chapa Computer-Vision-Based Web Service for Human Mental Fatigue Analysis Using Physiological Characteristics , by Batol Hamoud, Alexey Kashevnik MetaAlign: Prototype-Centric Multimodal Alignment for Robust Few-Shot Adaptation under Domain and Modality Shift , by Md Abdullah Al Mahmud Pias, Mahmoudul Hasan Jobayer, Syed Muhammad Bilal Haider, Fahim Istiak, Dewan Aminul Islam, Abdul Ahad
13:05	40m	Q&A for the Artificial Intelligence and Machine Learning I session
13:45	45m	Lunch break
Online/Onsite Session: Computer Vision, Image and Video Processing I		Chairman: Dmitry Korzun
Playlist: https://www.youtube.com/watch?v=iWnFjTQt6s&list=PLeyO6VZEXlwY		
14:30	40m	Datasets for Training and Evaluating Image-Editing Judges: Preference Data, Label Provenance, and Failure Modes , by Joris Strakeljahn, Viktoriia Vovchenko, Sergej Schultenkämper, Frederik Bäumer What Breaks in Multi-Image Schema Application? Factorial Oracle Interventions Reveal an Instance-Information Bottleneck , by Yiliu Xu, Xinjin Li, Yu Ma Ki-67-Derived Supervision for Proliferation Classification from H&E Histopathology Images , by Dominika Petříková, Patrik Ištvancko, Ivan Cimrák Resource-Constrained Video-LLMs: From Single-Node Optimization to Collaborative Orchestration , by Abhishek Dharmaratnakar, Srivaths Ranganathan, Anushree Sinha, Debanshu Das
15:10	25m	Q&A for the Computer Vision, Image and Video Processing I session
15:35	5m	Break
Online Session: Innovative Services and Solutions		Chairman: Alexey Kashevnik
Playlist: https://www.youtube.com/watch?v=j8Xs_ffdkgQ&list=PLT4rXisjT_o&pp=iAQBsAgC		
15:40	60m	Structured-Bid Smart Auction: Exact Clearing with Exclusive-Choice and All-or-None Declarations , by Ali Haydar Ozer FIB Aggregation at Scale: A Longitudinal Comparison of Research and Industry Algorithms , by William Sun, Peyton Mo, Timothy Liu, Tyler Wang, Yaoqing Liu Integrating AI into AAC: A Flexible Framework for Developers of Context-Aware Communication Systems , by Ishan Sen

		Real-Time Context-Aware Reward Allocation in Mobile Loyalty Networks: Architecture, Budgeted Bandit Optimization, and Reproducible Evaluation , by Naresh Alapati, Koteswararao Nallabothu Experimental Investigation of the Effect of Piezoelectric Sensor Position on Signal Characteristics and Classification via Machine Learning , by Nihat Çankaya Wearable Sensorics for Monitoring Human Fatigue: A Review in Respect to a Smart Safety Helmet , by Grigorij Rego, Vyacheslav Dimitrov, Dmitry Chistyakov, Dmitry Korzun
16:40	30m	Q&A for the Innovative Services and Solutions session
17:10	50m	Break
18:00	3h	FRUCT40 Meetup in Helsinki

November 5 (Thursday), Online participation

NOTE: Conference time is Finnish time (UTC+2)

Online Session: Artificial Intelligence in Text Analysis and Generation		Chairman: Michal Kvet
Playlist: https://www.youtube.com/watch?v=C_Q8IUmqLg4&list=PLDIP0jQiRQnE		
10:00	50m	Privacy-Preserving Local Large Language Models for Enterprise Document Analysis , by Mahalakshmi Ranga Prasad Thota Story of the Day: A Prototype for Language-Model-Based Multimodal Daily Story Generation from Structured Daily-Life Context , by Ishan Sen, Aygün Varol A Corpus of Russian-Language Film Criticism on Telegram: Structural Topic Modeling and Sentiment Analysis , by Aleksandr Shornikov An ASR-to-Universal-Dependencies Pipeline for Morphosyntactic Speaker Profiling of Russian Spontaneous Speech: A Case Study of Convicted Violent Offenders , by Aleksandra Tsygankova Citation-Aware RAG Framework Leveraging Hierarchical Fusion Representation for 3GPP Specifications , by Quang Nguyen, Hai Vu, Hanh Tran, Hung Nguyen, Thai Nguyen, Huan Vu
10:50	35m	Q&A for the Artificial Intelligence in Text Analysis and Generation session
11:25	5m	Break
Online Session: Computer Vision, Image and Video Processing II		Chairman: Nikolay Teslya
Playlist: https://www.youtube.com/watch?v=MN23EajvVNQ&list=PLfM9GpvBT_Kk		
11:30	40m	Efficient Streptococci Segmentation via Divergence-Guided Structured Pruning , by Aleksei Samarin, Anastasia Mamaeva, Egor Kotenko, Aleksei Toropov, Artem Nazarenko, Elena Mikhailova, Julia Afonina, Alexander Savelev, Alexander Motyko, Valentin Malykh Vision-Based GUI Test Infrastructure Generation for Industrial HMIs , by Gökhan Tontul, Ömer Korçak Traffic Monitoring in Low-Visibility Conditions: Dataset, Adapted Detector and Formal Virtual-Line Counting , by Vladislav Anisimov, Oleg Pereziabov, Ilya Afanasyev Evaluating OCR, LLM, and VLM Approaches for Nutritional Information Extraction and Nutri-Score Calculation from Packaged Food Labels , by Cagatay Onbasioglu, Rizan Hasan, Serkan Saglam
12:10	30m	Q&A for the Computer Vision, Image and Video Processing II session
12:40	50m	Lunch break
Online Session: Artificial Intelligence and Machine Learning II		Chairman: Alexander Smirnov
Playlist: https://www.youtube.com/watch?v=ioLKox70vEA&list=PLI3eD7C5CMAA		
13:30	55m	Does the Ranking Hold? A Practitioner-Facing Audit of Hallucination Detectors on Small, Quantized, On-Device LLMs , by Shubhra Mittal Beyond ROC-AUC: A Reproducible Evaluation Protocol for Discrimination, Calibration, and Prediction Stability in Tabular Machine Learning , by Ravi Teja Reddy Mandala, Bhavya Lahari Bommireddy Are Fairness Mitigation Rankings Stable? An Empirical Cross-Dataset, Cross-Metric Comparison of Bias-Mitigation Pipelines on Tabular Classifiers , by Gaurav Naresh Mittal Cost-Sensitive Policy Selection for Large Language Models: A Failure Analysis of Post-Hoc Uncertainty

		Transformations , by Ravi Teja Reddy Mandala, Bhavya Lahari Bommireddy A Two-Axis Framework for Clinical AI Architectures: Cognitive Autonomy, Neuro-Symbolic Coupling, and External Verification , by Hemachandran Babu, Priyadarsini Karthik
14:25	30m	Q&A for the Artificial Intelligence and Machine Learning II session
14:55	5m	Break
Online Session: Security and Privacy: Applications and Coding Theory Playlist: https://www.youtube.com/watch?v=9rRYfI4oeUU&list=PLQqBdhGbyxk8		Chairman: Dmitry Korzun
15:00	55m	SENTRY-DB: A Sovereign, Identity-Bound Streaming Gateway with Predictive Runtime Governance for LLM Agents , by Aisvarya Sampath Kumar, Mona Arora, Pravin Barapatre, Aditya Vardhan Pola, Arijit Roy, Rohit Singh PassKeyLLM: Adaptive Large Language Model-Driven Threat Detection for Android FIDO2 Passkey Authentication , by Naga Satya Praveen Kumar Yadati, Abhishek Sadananda Mulukala, Diwakar Reddy Peddinti, Saurabh Prakash Shetty Forwarding-Plane Anomaly Signals: Prefix Hijacking and Beyond , by Yaoqing Liu, Erdal Kose The Fast and the Vulnerable: A Systematization of WebAssembly Security , by Sahar Zamanian, Sara Ramezani, Maria Kihl On-Chain Multi-Factor Authentication for IoT Access Control , by Qian Feng, Yaoqing Liu, Stephanie Schuckers, Erdal Kose
15:55	35m	Q&A for the Security and Privacy: Applications and Coding Theory session
16:30		Closing of the day

November 6 (Friday), Online participation

NOTE: Conference time is Finnish time (UTC+2)

Online Session: Internet of Things and Enabling Technologies Playlist: https://www.youtube.com/watch?v=d2MICZG6phg&list=PLdJbxW8xsv9k		Chairman: Nikolay Shilov
10:00	25m	A Survey of Implementation-Level Vulnerabilities in LoRa@FIIT and STIoT Infrastructure: Toward an Extensible Security Checklist , by Adrián Ondov, Alexander Valach, Pavol Helebrandt, Pavel Čičák, Katarína Jelemenská Extendable and Interoperable IoT Architecture for Monitoring of Air Quality and its Dynamics , by Chen-Wei Yang, Vjatsheslav Kekshin, Juri Kubinets, Sergei Ponomar, Heiko Pödersalu, Aleksandra Dvoryanchikova, Andrei Lobov Poster: TinyML on the Edge: Optimizing Neural Networks for Low-Power Microcontrollers , by Ishaan Gupta
10:25	20m	Q&A for the Internet of Things and Enabling Technologies session
10:45	5m	Break
Online Session: The 13th DataWorld Workshop Playlist: https://www.youtube.com/watch?v=EOuCy4Or8mk&list=PLExsmady1a-Q		Chairman: Marek Kvet
10:50	40m	Optimizing Business Intelligence Dashboards: A Multi-Stage Framework and Unified Performance Metric , by Dev Dani, Hayato Yamana Impact of using column aliases in Oracle Database 26ai , by Michal Kvet A Provenance-Aware AI Framework for Detecting and Localizing Silent Data Integrity Failures in Enterprise Data Pipelines , by Sanket Shah Identification of Relationships in Relational Databases Using Large Language Models , by Jakub Rapšík, Michal Kvet
11:30	30m	Q&A for the 13th DataWorld Workshop session
12:00	15m	Official closing of the 40th FRUCT conference



FOR NOTES

The 40th Conference of Open Innovations Association FRUCT

Program

Helsinki, Finland
3 - 6 November 2026

A special word of thanks goes to the
IEEE Communications Society for sponsoring the conference.

CALL FOR PARTICIPATION

The 41st Conference of Open Innovations Association FRUCT

26-28 May 2027, Zilina, Slovakia



Overview

FRUCT conference is a high-quality scientific event for meeting academia and business people and setting projects. The average conference is attended by 150+ participants from academia and industry. The average **acceptance rate is below 40%**. Traditionally the conference attracts most active and talented students to present their R&D projects, meet interesting colleagues, create new teams, and find employers and investors. The conference invites the world-class academic and industrial experts to lecture on the hottest topics. We welcome submitting papers and take part in the conference, present your research results. The FRUCT conference sessions are accessible online plus we organize an onsite meet-up.

The conference offers low registration fee. FRUCT doesn't offer deadline extension, but **we offer the Early-bird submission** with the additional review cycle. For further details please refer to <http://www.fruct.org/cfp41>.

List of conference topics

- ✓ Artificial Intelligence in Text Analysis and Generation
- ✓ Artificial Intelligence, Robotics and Automation
- ✓ Agent-Based AI Systems for Business Transformation
- ✓ Robotics and Autonomous Systems and Applications
- ✓ Natural Language Processing and Speech Technologies
- ✓ Computer Vision, Image and Video Processing
- ✓ Context-Aware Systems and Proactive Services
- ✓ Internet of Things and Enabling Technologies
- ✓ Wireless Techs, Next Generation Networks, 5G & beyond
- ✓ Wearable Computing Systems and Architectures
- ✓ Security and Privacy: Applications and Coding Theory
- ✓ Smart Spaces and Semantic Web Technologies
- ✓ Computer Science Education & Teaching Methodologies
- ✓ DataWorld workshop: Database Systems and Analytics
- ✓ Algorithms and Modeling
- ✓ Big Data Analytics and Data Mining
- ✓ Knowledge and Data Management Systems
- ✓ Drone Technologies and Applications
- ✓ e-Health and Wellbeing Technologies
- ✓ Blockchain Technologies and Applications
- ✓ Intelligent Systems and Web Intelligence
- ✓ Cloud Computing Systems and Applications
- ✓ Crowdsourcing and Collective Intelligence
- ✓ Sensor Systems and Ad Hoc Networking
- ✓ Software Design and Innovative Applications
- ✓ Location-Based Services and Applications
- ✓ Smart Systems and Embedded Networks

Call for papers

Depending on the type and maturity level please submit your work into one of the following 3 categories:

1. **Full paper** (min 6 full pages, max 12 pages) OR 2. **Short paper** (min 2 pages, max 6 pages)

Submission deadline: 29 March 2027

Early-bird deadline: 1 March 2027

Notification of acceptance: **23 April 2027**

Camera-ready deadline: **30 April 2027**

3. **Poster / Demo proposal:** submission deadline: **7 May 2027**

Publication

All submitted Full Papers will be peer reviewed by the technical committee. Accepted Full papers and extended abstracts are published in the proceeding of FRUCT conference (ISSN 2305-7254). The accepted Full Papers will be included to **IEEE Xplore (application is pending)**, indexed by **Scopus**, **RSCI (VAK list)**, **DBLP**, etc. The conference proceedings are included in **AMiner**, **CORE**, and **Scimago Journal Rank (SJR)** <http://scimagojr.com/journalsearch.php?q=21100305223&tip=sid>. The selected papers get invitations to publish extended versions of the papers in the partner journals, e.g., **IJERTCS**. FRUCT is **rated by many national systems**, e.g., **Finnish (JUFO=1, ID: 72707)**, **Norwegian (NSD=1)**, **Danish (BFI=1, ID: 8782540)**.

Contacts

Paper templates, conference news and other relevant details are available at <http://www.fruct.org/conference41>. If you get some questions that are not covered at the conference web page, feel free to send email to info@fruct.org.