Program of

The 24th Conference of Open Innovations Association FRUCT

Moscow, Russia

8-12 April 2019

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 QUAELIBET!
SEMPER SINT IN FLORE!

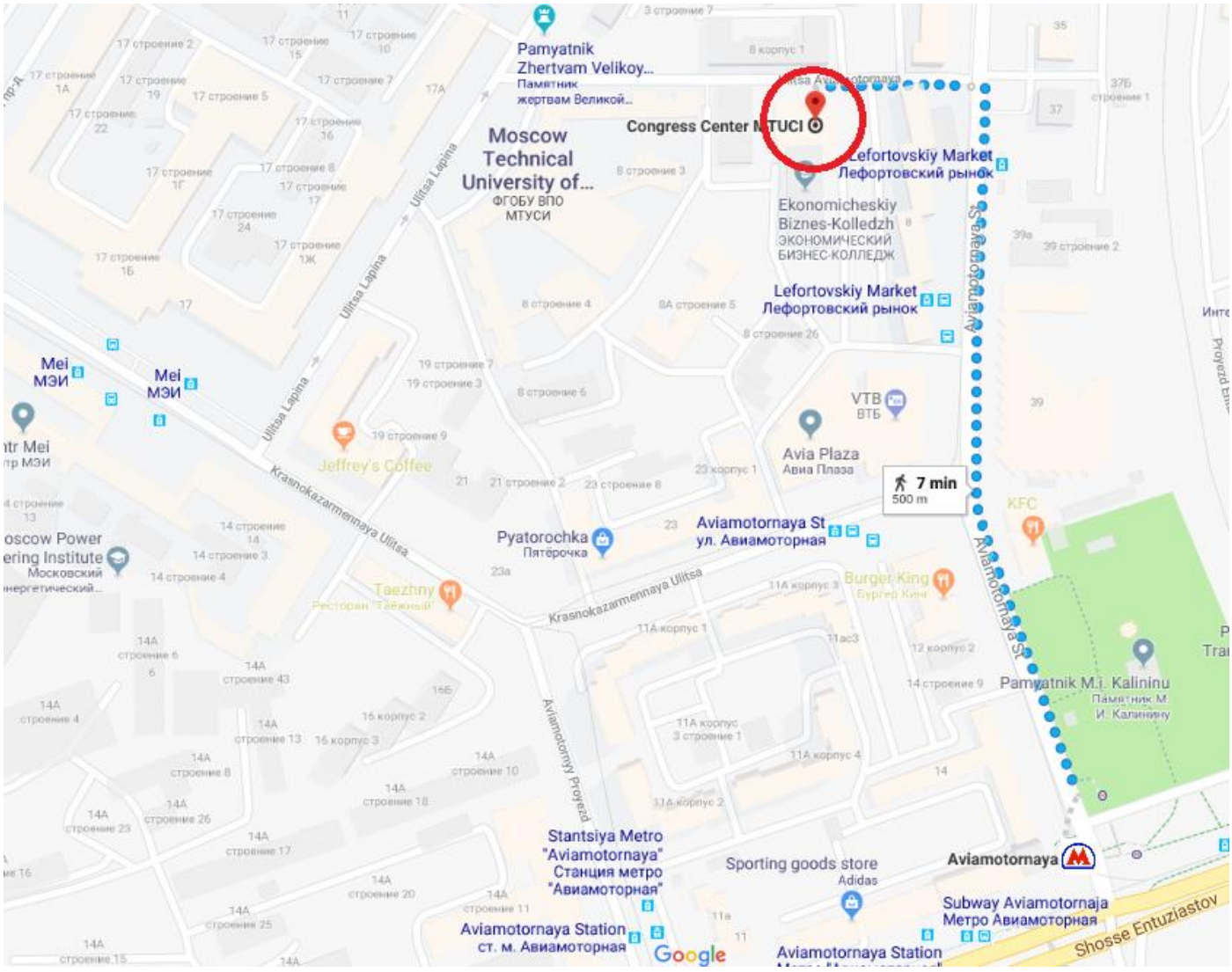
VIVANT OMNES VIRGINES
FACILES, FORMOSAE!
VIVANT ET MULIERES,
TENERAE, AMABILES,
BONAE, LABORIOSAE!

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

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

Practical Information

Conference venue: Congress Center of Moscow Technical University of Communications and Informatics (MTUCI)
Address: Aviamotornaya St 8, Building 39, Moscow, Russia, 111024 (500 meters from Aviatornaya metro station).



General Facts and Statistics for the 24th FRUCT Conference:

Total submissions: **188** Accepted Full Papers: **76** Authors from **4** continents Acceptance rate: **40%**
Total authors: **441** representing **26** countries Registered participants: **164** representing **15** countries

Organization Committee of the 24th FRUCT Conference

Local Chair: Vladimir Deart
FRUCT President: Sergey Balandin
Conference Secretary: Taoufik Ben Rejeb
Publishing team leader: Tatiana Tyutina

Program Committee

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Ernst Gabidulin (MIPT, Russia)
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Kirill Krinkin (Saint-Petersburg Electrotechnical University "LETI", Russia)

Kirill Kulakov (Petrozavodsk State University, Russia)
Michal Kvet (University of Zilina, Slovakia)
Ilya Lebedev (ITMO University, Russia)
Andrei Lobov (Tampere University, Finland)
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Christian Timmerer (Klagenfurt University, ITEC - MMC, Austria)
Segundo Moises Toapanta Toapanta (Universidad Politècnica Salesiana del Ecuador, Ecuador)
Luca Turchet (Queen Mary University of London, Center for Digital Music, UK)
Timofey Turenko (MariaDB Corporation Ab, Finland)
Shinsuke Uda (Kyushu University, Japan)
Dmitry Ustalov (University of Mannheim, Germany)
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Fabio Viola (ARCES - Advanced Research Center on Electronic Systems, Italy)
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Katarzyna Wac (University of Geneva, Switzerland)
Maxim Yatskovskiy (FRUCT MD Ltd, Russia)
Weider Yu (San Jose State University, USA)
Mark Zaslavskiy (ITMO University, Russia)
Arkady Zaslavsky (SCIRO, Australia)

Program of the 24th FRUCT conference

April 8-12, 2019, Moscow, Russia

Congress Center of Moscow Technical University of Communications and Informatics, Aviamotornaya St 8, Bld. 39

DATE	TIME	PROGRAM		
08.04.19	10:00-18:00	**Internal meetings of FRUCT working groups** (by invitation only)		
09.04.19	11:00-14:00	**Sailfish Mobile OS RUS days in Moscow: Training (in Russian)**, Auditorium 1		
	14:00-15:00	**Break**		
	15:00-19:00	**Sailfish Mobile OS RUS days in Moscow: Training (cont)**, Auditorium 1	**SPARQL Event Processing Architecture (SEPA) training**, Auditorium 2	
10.04.19	09:00-13:00	**Conference Registration**, Lobby 1st floor	**SPARQL Event Processing Architecture (SEPA) training (cont.)**, Auditorium 2	
	13:00-15:05	**Opening of the 24th FRUCT conference**, Main Conference Hall, 2nd floor Welcome from Konstantin Y. Noskov, Minister of Digital Development, Communications and Mass Media (to be confirmed); Welcome words from the Russian Federal Communications Agency (to be confirmed), from Sergey D. Erokhin, Rector of MTUCI, and from Rashit R. Ismailov, Head of Nokia Russia **Keynote talk** by Gyorgy Fazekas, Queen Mary University of London, UK		
	15:05-15:30	**Coffee break,** Lobby 2nd floor		
	15:30-16:15	Workshop on Semantic Audio & IoT, Main Conference Hall	Towards Smart Roads, Auditorium 1	Natural Language Processing, Auditorium 2
	16:15-16:30	**Coffee break,** Lobby 2nd floor		
	16:30-18:00	Internet of Things and Enabling Technologies, Main Conference Hall	Digital Economy I, Auditorium 1	Smart Systems, Auditorium 2
11.04.19	09:00-09:30	**Registration**, Lobby 1st floor		
	09:30-11:30	Computer Vision, Image and Video Processing I, Main Conference Hall	Innovative Applications and Software Design I, Auditorium 1	Digital Economy II, Auditorium 2
	11:30-12:00	**Coffee break,** Lobby 2nd floor		
	12:00-14:00	Computer Vision, Image and Video Processing II, Main Conference Hall	Innovative Applications and Software Design II, Auditorium 1	Security, Privacy and Coding Theory, Auditorium 2
	14:00-15:00	**Lunch**		
	15:00-15:45	**Keynote talk** by Kirill Chuvilin, Open Mobile Platform LLC, Main Conference Hall		
	15:45-16:00	**Coffee break,** Lobby 2nd floor		
	16:00-17:00	Smart Spaces, Linked Data and Semantic Web, Main Conference Hall	e-Health, Wellbeing and Bioinformatics I, Auditorium 1	**Sailfish Mobile OS RUS Meetup (in Russian)**, Auditorium 2
	17:00-17:05	**Short break**		
	17:05-17:30	Pecha Kucha pitches of demos/posters, Main Conference Hall		
	17:30-20:00	**Demos/Posters Session and Social Event**, Lobby 2nd floor		
12.04.19	09:00-09:30	**Registration**, Lobby 1st floor		
	09:30-10:30	**Keynote talk** by Vitaly Kreyndelin, MTUCI University, Main Conference Hall		
	10:30-10:45	**Coffee break,** Lobby 2nd floor		
	10:45-12:15	Next Generation Networks	Knowledge and Data	e-Health, Wellbeing and

		I, Main Conference Hall	Managements Systems I, Auditorium 1	Bioinformatics II, Auditorium 2
	12:15-12:30	**Coffee break,** Lobby 2nd floor		
	12:30-14:00	Next Generation Networks II, Main Conference Hall	Knowledge and Data Managements Systems II, Auditorium 1	
	14:00-15:00	**Lunch**		
	15:00-16:30	Next Generation Networks III, Main Conference Hall	LBS and e-Tourism, Auditorium 1	
	16:30-16:45	**Official closing of the 24th FRUCT conference**, Main Conference Hall		

KEYNOTE SPEAKERS

Gyorgy Fazekas is a lecturer in Digital Media at ***Queen Mary University of London, UK***. He received an MSc degree at Queen Mary University of London, and a subsequent PhD degree in 2012 at the same institution. His doctoral thesis titled "Semantic Audio Analysis - Utilities and Applications" describes novel applications of semantic audio analysis, Semantic Web technologies and ontology-based information management in Music Information Retrieval as well as in intelligent audio production tools.

His main research interest includes the development of semantic audio technologies and their applications to creative music production, ontology-based information management, audio signal processing and machine learning, Semantic Web, linked data, and knowledge-based reasoning.

His keynote talk on ***Ontology Mediated Semantic Audio Services and Applications*** is scheduled for **Apr. 10 at 14.05-15.05**.

Kirill Chuvilin leads the developer relations department of ***Open Mobile Platform LLC, Russia***. He is responsible for training courses, interaction with the academic community and universities, improving development technologies and technical support for developers. Kirill Chuvilin holds a PhD in the theoretical foundations of computer science. His research interests include intelligent analysis of structured text documents, optical tracking, automatic correction of errors and vulnerabilities. He graduated with honors from the Moscow Institute of Physics and Technology in 2010. Since the same year he has been taught mathematical disciplines there and now is an assistant professor in two departments. Since 2016, Kirill has been working in Open Mobile Platform LLC, which is developing a Russian trusted operating system for mobile devices.

His keynote talk entitled ***Linux-based Trusted Mobile OS: Goals, Technologies, Opportunities for Cooperation*** is scheduled for **Apr. 11 at 15.00-15.45**.

Vitaly Kreyndelin is a full Professor at the Department of Information Technology at ***Moscow Technical University of Communications and Informatics, Russia***. He is an author and co-author of over 250 technical publications and more than 30 international patents in the field of wireless systems and signal processing. His current research interests include generation and processing of signals in mobile radio communication systems, including OFDM, MIMO, NOMA and methods for reducing the computational complexity of signal processing algorithms in communication. He successfully leads the scientific work of postgraduate students. Under his advising four Ph.D. thesis were successfully holds.

His keynote talk on ***MIMO Systems for 5G Communication Networks*** is scheduled for **April 12 at 09.30-10.30**.

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April 8-12, 2019, Moscow, Russia

April 10 (Wednesday)

Congress Center of Moscow Technical University of Communications and Informatics, Aviamotornaya St 8, Bld. 39

09:00	4h	**24th FRUCT Conference Registration**, Lobby 1st floor		
Session: Official opening of the 24th FRUCT conference **Room:** Main Conference Hall				Chairman: Sergey Balandin
13:00	5m	Official opening of the 24th FRUCT conference		
13:05	10m	Addressing to the conference participants by Konstantin Yurievich Noskov, Minister of Digital Development, Communications and Mass Media, Russia (to be confirmed)		
13:15	10m	Addressing to the conference participants by the Russian Federal Communications Agency (to be confirmed)		
13:25	10m	Welcome words from Sergey Dmitrievich Erokhin, Rector of MTUCI		
13:35	10m	Welcome words from Rashid Rustamovich Ismailov, Head of Russia Branch at Nokia Corporation		
13:45	20m	Invited talk: Post-quantum cryptography - Old Wine into New Wineskins, by Grigory Kabatyansky, Skoltech, Russia		
14:05	1h	**Keynote talk:** Ontology Mediated Semantic Audio Services and Applications, by Gyorgy Fazekas, Queen Mary University of London, UK		
15:05	25m	**Coffee break**, Lobby 2nd floor		
Workshop: Semantic Audio and the IoT I (ISAI19) **Room:** Main Conference Hall Chairman: Gyorgy Fazekas			**Session:** Towards Smart Roads **Room:** Auditorium 1 Chairman: Grigory Kabatyansky	**Session:** Natural Language Processing **Room:** Auditorium 2 Chairman: Taoufik Ben Rejeb
15:30	15m	End-to-end Convolutional Neural Networks for Sound Event Detection in Urban Environments, by Pablo Zinemanas, Pablo Cancela and Martín Rocamora, The University of the Republic, Uruguay	Cluster-Based Mobility Management in Dematerialised Traffic Rules Infrastructures, by Christophe Feltus, Luxembourg Institute of Science and Technology, Luxembourg	Sentiment in Academic Texts, by Valery Solovyev, Marina Solnyshkina and Elzara Gafiyatova, Kazan Federal University, Russia, Danielle McNamara, Arizona State University, USA, Vladimir Ivanov, Innopolis University
15:45	15m	Analysis and Processing of Audio Signals Using Complex Form Representation, by Vladimir Taktakishvili, Alexey Ovchinnikov, Oleg Popov and Valentin Abramov, MTUCI, Russia	Adaptation and Personalization in Driver Assistance Systems, by Andrew Ponomarev, SPIIRAS and Anastasiia Chernysheva, ITMO University, Russia	Sentiment Classification into Three Classes Applying Multinomial Bayes Algorithm, N-grams, and Thesaurus, by Ksenia Lagutina, Vladislav Larionov, Vladislav Petryakov, Nadezhda Lagutina, Ilya Paramonov and Ivan Shchitov, Yaroslavl State University, Russia
16:00	15m	Objective Assessment of the Quality of Transmission and Informativeness of a Speech Signal According to Statistical Parameters, by Vladimir Taktakishvili, Alexey Ovchinnikov, Oleg Popov and Valentin Abramov, MTUCI, Russia	Dangerous Situations Determination by Smartphone in Vehicle Cabin: Classification and Algorithms, by Alexey Kashevnik, Kseniya Karelskaya and Maksim Repp, ITMO University, Russia	Analysis of Natural Language Sentences by Methods of the Theory of Graphs and the Theory of Sets, by Andrey Alyoshintsev, MTUCI and Alexander Sak, Moscow State University of Civil Engineering, Russia
16:15	15m	**Coffee break**, Lobby 2nd floor		

Session: IoT and Enabling Technologies **Room:** Main Conference Hall Chairman: Alexey Kashevnik			**Session:** Digital Economy I **Room:** Auditorium 1 Chairman: Alexander Geyda	**Session:** Smart Systems **Room:** Auditorium 2 Chairman: Valentin Olenev
16:30	15m	Resource Allocation and Sharing for Transmission of Batched NB IoT Traffic over 3GPP LTE, by Sergey Stepanov and Mikhail Stepanov, MTUCI, Russia, Ariunaa Tsogbadrakh, Mongolia, Juvent Ndayikunda, Burundi and Umer Andrabi, MIPT, India	Technique of Complex Measurement of the Level of Digital Development and its Impact on the National Economy, by Dmitriy Tkachenko and Tatyana Kuzovkova, MTUCI, Russia	Simulation of ExoMars2020's rover network using SystemC, by Anas Nairi and Julien Plante, Polytechnic Institute of Advanced Sciences, France, Valentin Olenev, Nikolay Sinyov and Ilya Korobkov, SUAI University, Russia
16:45	15m	Management of the Internet of Things System Based on Decision-making and Optimization Approaches, by Igor Lvovich, Yakov Lvovich, Andrey Preobrazhenskiy, Voronezh Institute of High Technologies and Oleg Choporov, Vornezh State Technical University, Russia	Formation of Export Clusters in Food Trade of the Russian Federation in the Conditions of Digital Transformation of the Economy, by Vladimir Naumov, Elena Zhiriaeva and Pavel Naumov, North-West Institute of Management of RANEPA, Russia	A Multiclass Retrial System with Coupled Orbits and Service Interruptions: Verification of Stability Conditions, by Taisia Morozova, PetrSU and Evsey Morozov, Karelian Research Centre of RAS, Russia and Ioannis Dimitriou, University of Patras, Greece
17:00	15m	Structural Synthesis of the IoT System for the Fog Computing, by Evgeny Saksonov and Yury Leokhin, MTUCI and Peter Panfilov, High School of Economy, Russia	Soft Skills in IT-Education as a Condition of Competitive Ability in Information-Oriented Society, by Natalya Pluzhnikova, Elena Korableva and Yulia Polyanskaya, MTUCI, Russia	Design and Simulation of Onboard SpaceWire Networks, by Valentin Olenev, Irina Lavrovskaya, Ilya Korobkov and Yuriy Sheynin, SUAI University, Russia
17:15	15m	Program System for Object Models Deductive Synthesis, by Nikolai Klimov, ITMO University, Nataly Zhukova and Natalya Andriyanova, SPIIRAS, Russia	The Digital Economy of the Region: a Distributed Infrastructure of the Industry Ecosystem, by Igor Grishin and Rena Timirgaleeva, Moscow State University, Russia	Upgrade of Ethernet-SpaceWire Protocol, by Evgeny Yablokov, Alexey Vinogradov and Valeria Yachnaya, SUAI University, Russia
17:30	15m	Method for Calculation the Total Migration Time of Virtual Machines in Cloud Data Centers, by Andrew Toutov, Anatoly Vorozhtsov and Natalia Toutova, MTUCI, Russia	E-Lecture-Presentation as an Important Element of Learning in Higher Education, by Artem Adzhemov, Irina Manonina and Vladimir Shestakov, MTUCI, Russia	Energy Fields' Impact on Biological Objects, by Anastasia Petrushevskaya, Alexey Rabin and Vyacheslav Kilimnik, SUAI University, Russia
17:45	15m	Optimization of Autonomous Vehicles Movement in Urban Intersection Management System, by Sergey Chuprov, Ilya Viksnin, Iuliia Kim and Gleb Nedosekin, ITMO University, Russia	The Probabilistic Model of Distortions of Agrosmart Data, by Aiman Iskakova, Jamilya Jumabayeva and Saule Burgumbayeva, Gumilyov Eurasian National University, Kazakhstan	Air Navigation: Automation Method for Controlling the Process of Detecting Aircraft by a Radar Complex, by Igor Grishin and Rena Timirgaleeva, Moscow State University, Russia
18:00		**Closing of Day**		

April 11 (Thursday)

Congress Center of Moscow Technical University of Communications and Informatics, Aviamotornaya St 8, Bld. 39

09:00	30m	**Conference registration**, Lobby 1st Floor

Session: Computer Vision, Image and Video Processing I **Room:** Main Conference Hall Chairman: Vladimir Khryashchev			**Session:** Innovative Applications & Software Design I **Room:** Auditorium 1 Chairman: Ivaylo Atanasov	**Session:** Digital Economy II **Room:** Auditorium 2 Chairman: Igor Grishin
09:30	15m	Construction of 3D Digital Model of a Rock Sample Based on FIB-SEM Data, by Iryna Reimers, Ilia Safonov and Ivan Yakimchuk, Schlumberger Moscow Research, MIPT, Russia	Ground Profile Recovery from Aerial 3D LiDAR-based Maps, by Adelya Sabirova, Maksim Rassabin, Roman Fedorenko and Ilya Afanasyev, Innopolis University, Russia	Conceptual and Formal Models of Information Operations Use Effects Formation in Technological Systems, by Alexander Geyda, SPIIRAS, Russia
09:45	15m	Faces 2D-Recognition and Identification Using the HOG Descriptors Method, by Vyacheslav Voronov, Vladimir Strelnikov, Liliya Voronova, Artyom Trunov and Andrey Vovik, MTUCI, Russia	Classes on Artificial Intelligence, Robotics and Automation with Students of Technical Specialties, by Evgeniy Titov, MTUCI, Vladimir Simonov and Alexey Erpelev, Russian State Social University, Russia	To what Extent do College Students from Different Regions Publicly Share Personal Data on Facebook? by Antonin Pavlicek and Petr Doucek, University of Economics, Czech Republic and Sergey Yablochnikov, MTUCI, Russia
10:00	15m	Blind Quality Assessment for Slice of Microtomographic Image, by Anton Kornilov, Ilia Safonov and Ivan Yakimchuk, Schlumberger Moscow Research, MEPhI, Russia	Development of a Software Complex for Identification of Trunking Radio Signals in Cognitive Radio Systems, by Ekaterina Kandaurova and Denis Chirov, MTUCI, Russia	Methods of Developing Systems Based on Blockchain, by Mikhail Gorodnichev, Alexandra Kukharenko, Elena Kukharenko and Tatyana Salutina, MTUCI, Russia
10:15	15m	Subsystem for Simple Dynamic Gesture Recognition Using 3DCNNLSTM, by Mikhail Artemov, Lily Voronova, Vyacheslav Voronov, Artem Goncharenko and Vasiliy Usachev, MTUCI, Russia	Information System for Obtaining Parameters High-frequency Vibrations of Road-Construction Machines, by Mikhail Gorodnichev, MTUCI, Rinat Gematudinov, Moscow Automobile & Road Construction Technical University and Khizar Dzhabrailov, MTUCI, Russia	Development of an Intelligent Module for Monitoring and Analysis of Client's Bank Transactions, by Vasily Meltsov, Pavel Novokshonov, Dmitry Repkin and Alexey Kuvaev, Vyatka State University and Nataly Zhukova, SPIIRAS, Russia
10:30	15m	Detection of Texture Objects on Multichannel Images, by Elena Medvedeva and Alena Evdokimova, Vyatka State University, Russia	Context of Mobile Application Quality Risk Management Process, by Andei Volkov and Valery Semin, MTUCI and Vladimir Semin, Yandex, Russia	Distance Foreign Language Testing as a Part of Digital Education in a Non-linguistics University, by Tatiana Kozhevnikova, MTUCI, Russia
10:45	15m	Multi-threshold Object Selection in Remote Sensing Images, by Vladimir Volkov, Oleg Markelov and Mikhail Bogachev, SPbETU "LETI", Russia	Multi-agent SLAM for Low Cost Platforms, Anton Filatov, SPbETU "LETI" and Kirill Krinkin, Open Source and Linux Lab, Russia	Digital Radio Broadcasting Network in the Arctic Region, by Oleg Varlamov, Vladimir Varlamov and Anna Dolgopyatova, MTUCI, Russia
11:00	15m	Industrial Application of Accented Visualization based on Augmented Reality, by Anton Ivaschenko and Michael Milutkin, Samara State Technical University and Pavel Sitnikov, ITMO University, Russia	Latency/Wearout in an SSD-based Storage System with Replication on Write, by Alexander Rumyantsev, Evgeny Ivashko and Ilya Chernov, KRC RAS / Institute of Applied Math Research, Dmitry Kositsyn, Anton Shabaev and Vadim Ponomarev, PetrSU, Russia	Enactable Electronic Contracts in E-Commerce: Models, Technologies And Architectures, by Anna Burunova, SPbETU "LETI", Andrew Ponomarev, SPIIRAS and Nikolay Teslya, ITMO University, Russia

11:15	15m	Digital Signage Personalization through Analysis of the Visual Information about Viewers, by Nikolay Turov, ITMO University, Nikolay Shilov and Nikolay Teslya, SPIIRAS, Russia	Application Level User Traffic Control at the Mobile Network Edge, by Evelina Pencheva, Ivaylo Atanasov, Denitsa Velkova and Ventsislav Trifonov, Technical University of Sofia, Bulgaria	Transformation of Criteria and Indicators of Digital Development of Economy and Information Society, by Olga Sharavova, Tatyana Kuzovkova and Dmitriy Kuzovkov, MTUCI, Russia
11:30	30m	**Coffee break**, Lobby 2nd floor		
Session: Computer Vision, Image and Video Processing II **Room:** Main Conference Hall Chairman: Nikolay Shilov			**Session:** Innovative Applications and Software Design II **Room:** Auditorium 1 Chairman: Evelina Pencheva	**Session:** Security, Privacy and Coding Theory **Room:** Auditorium 2 Chairman: Dmitry Namiot
12:00	15m	The Relationship between the Representation of a IIR Digital Filter in the State Space and the Description by the Topological Matrix, by Vladislav Lesnikov, Tatiana Naumovich and Alexander Chastikov, Vyatka State University, Russia	Structural and Informational Diversity of Digital Filters Based on Multivariate Arithmetic of Finite Field, by Alexander Veligosha, Military Academy of Strategic Rocket Forces, Alexander Voznesenskiy, Dmitrii Kaplun and Danil Bogaevskiy, SPbETU "LETI", Russia	Cipher Modification Against Steganalysis Based on NIST Tests, by Valery Korzhik and Duy Cuong Nguyen, Bonch-Bruevich Saint-Petersburg State University of Telecommunications, Russia and Guillermo Morales-Luna, CINVESTAV-IPN, Mexico
12:15	15m	Analysis of Machine Learning Methods for Wildfire Security Monitoring with an Unmanned Aerial Vehicles, by Dmitriy Alexandrov, Elizaveta Pertseva, Ivan Berman, Igor Pantiukhin and Aleksandr Kapitonov, ITMO University, Russia	Intelligent Automated System of Controlled Synthesis of MAO-Coatings, by Ekaterina Pecherskaya, Pavel Golubkov, Oleg Karpanin, Maksim Safronov, Dmitriy Artamonov and Aliya Bibarsova, Penza State University, Russia	Enumeration of Boolean Mapping with Given Cryptographic Properties for Personal Data Protection in Blockchain Data Storage, by Konstantin Pankov, MTUCI, Russia
12:30	15m	Techniques for Improving Color Segmentation in the Task of Identifying Objects on Aerial Images, by Denis Kasimov, Kalashnikov Izhevsk State Technical University, Russia	Mobile Edge Service for Charging Control, by Ivaylo Atanasov, Evelina Pencheva, Aleksandar Nametkov and Ventsislav Trifonov, Technical University of Sofia, Bulgaria	Image Steganography Technique Using Algebraic Fractals, by Oleg Sheluhin and Dzhennet Magomedova, MTUCI, Russia
12:45	15m	Towards Providing Relevant Digital Signage Advertisement to a Group of Users Based on Users' Interests Investigation, by Polina Morozova, ITMO University and Nikolay Shilov SPIIRAS, Russia	Machine Learning Approaches to Choose Heroes in Dota 2, by Iuliia Porokhnenko, Petr Polezhaev and Alexander Shukhman, Orenburg State University, Russia	Evaluation of Effectiveness of Reduction Information Risk Using Fuzzy Algorithm, by Ekaterina Rogatneva and Alexander Bolshakov, MTUCI, Russia
13:00	15m	TCP is Bottleneck of Video Streaming via OTT, by Alexey Nesterkin, IT HUB Group and Vladimir Deart, MTUCI, Russia	Groups in Sensor Fusion: Direct and Iterative Measurements, by Kirill Krinkin and Artyom Filatov, SPbETU "LETI", Russia	Genetic coding of digital watermarks to enhance IoT security, by Dmitry Zaichenko and Irina Sineva, MTUCI, Russia
13:15	15m	Building Detection on Aerial Images Using U-NET Neural Networks, by Leonid Ivanovsky, Vladimir Khryashchev and Vladimir Pavlov, Yaroslavl State University and Anna Ostrovskaya, RUDN University, Russia	Network Topology Discovery: a Problem of Incomplete Data Improvement, by Anton Andreev, Anton Shabaev and Iurii Bogoiavlenskii, Petrozavodsk State University, Russia	Continuous User Authentication by the Classification Method Based on the Dynamic Touchscreen Biometrics, by Kirill Leyfer and Anton Spivak, ITMO University and SPIIRAS, Russia

13:30	15m	Hand Gesture Recognition with Multiple Leap Motion Devices, by Maxim Khlamov, Vasilij Kiselev and Kirill Chuvilin, MIPT, Russia	An Architectural Approach to Increase Adoption of the MDBCI tool, by Andrey Vasilyev and Maksim Kosterin, Yaroslavl State University, Russia	Critical information infrastructures security modeling, by Sergey Erokhin, Andrey Petukhov and Pavel Pilugin, MTUCI, Russia
13:45	15m	Landmarks detection by contour analysis in the problem of SLAM, by Vladimir Antipov, Vasiliy Kirnos, Vera Kokovkina and Andrey Priorov, Yaroslavl State University, Russia	Unsupervised Classifying of Software Source Code Using Graph Neural Networks, by Petr Vytovtov and Kirill Chuvilin. Moscow Institute of Physics and Technology, Russia	Experimental Estimation of a Potential Eavesdropping Distance for Electromagnetic Emanations of Video System, by Alexander Bolshakov and Danil Tyulkin, MTUCI, Russia
14:00	1h	**Lunch**		
15:00	45m	**Keynote talk:** Linux-based Trusted Mobile OS: Goals, Technologies, Opportunities for Cooperation, by Kirill Chuvilin, Open Mobile Platform LLC, Russia **Room:** Main Conference Hall		
15:45	15m	**Coffee break**, Lobby 2nd floor		

Session: Smart Spaces, Linked Data and Semantic Web **Room:** Main Conference Hall Chairman: Fabio Viola			**Session:** e-Health, Wellbeing and Bioinformatics I **Room:** Auditorium 1 Chairman: Oleg Medvedev	**Sailfish Mobile OS RUS Meetup (in Russian)**, Auditorium 2 (for details refer to **page 15**)
16:00	15m	An Approach to Generating Ontology–Based Object Model for Smart-M3 platform, by Kirill Kulakov and Sergey Marchenkov, Petrozavodsk State University and Sergey Tishkov, Karelian Research Centre of the Russian Academy of Sciences, Russia	Novel Method for Recording High Frequency Human Skin Temperature Oscillations, by Nikolai Suvorov, Alexander Belov and Timofey Sergeev, Institute of Experimental Medicine FSBSI "IEM", Russia, Konstantin Kuliabin, Albert-Ludwigs-Universität Freiburg, Germany and Aleksei Anisimov, SPbETU “LETI”, Russia	
16:15	15m	Random Backoff for Active Control of Information Updates in Smart Spaces, by Olga Bogoiavlenskaia, Dmitry Korzun and Kirill Kulakov, Petrozavodsk State University, Russia	Estimation of the Air Flow Behavior in the 3D Solid and Numerical Models of Nose, by Gennadij Lukyanov and Anna Rassadina, ITMO University and ETU "LETI", and Roman Neronov, JSC "Modern Medical Technologies", Russia	
16:30	15m	Blockchain Solutions for Multi-Agent RoboticSystems: Related Work and Open Questions, by Ilya Afanasyev, Alexander Kolotov, Ruslan Rezin and Konstantin Danilov, Innopolis University, Alexey Kashevnik, SPIIRAS, Russia and Vladimir Jotsov, University of Library Studies and Information, Bulgaria	Texture Analysis of Non-Small Cell Lung Cancer on Unenhanced CT and Blood Flow Maps: a Potential Prognostic Tool, Serena Baiocco, University of Bologna, Domenico Barone and Giampaolo Gavelli, IRCCS-IRST, Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori and Alessandro Bevilacqua, DEIS-ARCES University of Bologna, Italy	
16:45	15m	Informational Space in the System of Smart Factory, by Maria Usova, Ilya Viksnin and Alisa Vorobeva, ITMO University, Russia	Impact of Adversarial Examples on the Efficiency of Interpretation and Use of Information from High-Tech Medical Images, by Aleksandra Vatian, Natalia Gusarova, Natalia Dobrenko, Sergey Dudorov, Niyaz Nigmatullin, Anatoly Shalyto and Artem Lobantsev, ITMO University, Russia	
17:00	5m	**Short Break**		
Session: Pecha Kucha Pitches of Demos and Posters Chairman: Ilya Paramonov **Room:** Main Conference Hall				
17:05	25m	Pecha Kucha pitch presentations of the demos/posters (2min/pitch, the list of demos/posters is provided at **page 19**)		

Session: Conference social event combined with Demo and Poster session **Room:** Lobby 2nd floor		Chairman: Ilya Paramonov
17:30	2.5h	**Demo & Poster Session combined with Social Event**
20:00		**Closing of Day**

April 12 (Friday)
Congress Center of Moscow Technical University of Communications and Informatics, Aviamotornaya St 8, Bld. 39

09:00	30m	**Conference registration**, Lobby 1st Floor		
09:30	45m	**Keynote talk:** MIMO Systems for 5G Communication Networks, by Vitaly Kreyndelin, MTUCI, Russia **Room:** Main Conference Hall		
10:30	15m	**Coffee break**, Lobby 2nd floor		
Session: Next Generation Networks I **Room:** Main Conference Hall Chairman: Vladimir Deart			**Session:** Knowledge and Data Managements Systems I **Room:** Auditorium 1 Chairman: Luca Roffia	**Session:** e-Health, Wellbeing and Bioinformatics II **Room:** Auditorium 2 Chairman: Serena Baiocco
10:45	15m	On Network Functions Virtualization and Hybrid Circuit-Packet Switching, by Manfred Sneps-Sneppe, Ventspils University College, Latvia	Distributed Big Data Driven Framework for Cellular Network Monitoring Data, by Aleksandr Suleikin, Trapeznikov Institute of Control Sciences RAS and Peter Panfilov, National Research University Higher School of Economics, Russia	Sign Language Recognition Information System Development Using Wireless Technologies for People with Hearing Impairments, by Artem Goncharenko, Lilia Voronova, Mikhail Artemov, Vyacheslav Voronov and Danil Bezumnov, MTUCI, Russia
11:00	15m	Critical information infrastructures monitoring based on software-defined networks, by Sergey Erokhin, Andrey Petukhov and Pavel Pilugin, MTUCI, Russia	Mapping the NGSI-LD context model on top of a SPARQL Event Processing Architecture: implementation guidelines, by Fabio Viola, Francesco Antoniazzi, Cristiano Aguzzi and Luca Roffia, University of Bologna, Italy and Carlos Kamienski, Federal University of ABC (UFABC), Brazil	Mobile ECG Monitoring Device with Bioimpedance Measurement and Analysis, by Maxim Safronov, Andrey Kuzmin, Oleg Bodin, Viktor Baranov, Alexey Trofimov and Alexander Tychkov, Penza State University, Russia
11:15	15m	Reliability Challenges in Software Defined Networking, by Victor Netes and Margarita Kusakina, MTUCI, Russia	Data Management in Hierarchical Database, by Michal Kvet and Karol Matiasko, University of Žilina, Slovakia	Algorithm for Monitoring the State of the Musculoskeletal System in Scoliosis, by Ilya Boev, Kirill Tomchuk and Andrey Tyurlikov, SUAI University, Russia
11:30	15m	Modeling of OpenFlow-Based SDN Node with Taking into Account the Differences of Serving TCP and UDP Traffic Streams, by Sergey Stepanov and Mikhail Stepanov, MTUCI, Russia	A Knowledge-based Recommendation System for Time Series Classification, by Man Tianxing, ITMO University, Nataly Zhukova, SPIIRAS and Nikolay Mustafin, SPbETU "LETI", Russia	Multi-Source Data Sensing in Mobile Personalized Healthcare Systems: Semantic Linking and Data Mining, by Dmitry Korzun and Alexander Meigal, Petrozavodsk State University, Russia
11:45	15m	The Study of Wireless Network Resources while Transmitting Heterogeneous Traffic, by Veronika Antonova, MTUCI, Russia	Combined Imputation Method for Solving Classification Tasks with Missing Data, by Pavel Gavrilov and Konstantin Maykov, Bauman Moscow	Neural Network Using for Prediction Spinal Diseases, by Yue Wang, Danil N.Bezumnov and Vera A.Verba, MTUCI and Elena A.Tarasenko, National

			State Technical University, Russia	Research University Higher School of Economics, Russia
12:00	15m	External Electromagnetic Influences upon Optical Cables, by Stanislav Sokolov, MTUCI, Russia	Anomaly States Monitoring of Large-Scale Systems with Intellectual Analysis of System Logs, by Oleg Sheluhin and Andrey Osin, MTUCI, Russia	Method of Endoscopic Images Analysis for Automatic Bleeding Detection and Segmentation, by Alexandr Pozdeev, Nataliia Obukhova and Alexandr Motyko, SPbETU "LETI" and Boris Timofeev, SUAI University, Russia
12:15	15m	**Coffee break**, Lobby 2nd floor		
Session: Next Generation Networks II **Room:** Main Conference Hall Chairman: Vitaly Kreyndelin			**Session:** Knowledge and Data Managements Systems II **Room:** Auditorium 1 Chairman: Francesco Antoniazzi	
12:30	15m	A New Approach of Implementation of MMSE Demodulator for Massive MIMO Systems, by Aleksey Smirnov, Vitaly Kreyndelin and Taoufik Ben Rejeb, MTUCI, Russia	A Deep Forest Improvement by Using Weighted Schemes, by Lev Utkin, Andrei Konstantinov, Mikhail Ryabinin and Viacheslav Chukanov, SPb Polytechnic University and Anna Meldo, SPb Clinical Research Center for Special Types of Medical Care, Russia	
12:45	15m	Noise Immunity Improvement of the Modemin Case of Optimal Finite Signals which do not Cause Intersymbol Interferencein a Linear Communications Channel, by Vladimir Sannikov, Valeriy Volchkov and Alexander Mamonov, MTUCI, Russia	Comparative Performance Analysis of Information Dispersal Methods, by Maxim Deryabin and Nikolai Chervyakov, North Caucasus Federal University, Russia, Andrei Tchernykh, CICESE Research Center, Mexico, Viktor Berezhnoy, Anvar Djurabaev, Anton Nazarov and Mikhail Babenko, North Caucasus Federal University, Russia	
13:00	15m	Antenna Selection and STC Coding Technologies Perspectives for MIMO Systems with Large Number of Antennas, by Sergey Tereshonkov and Denis Pankratov, MTUCI, Russia	The Information Evaluation System of Data Processing Results, by Nataly Zhukova, SPIIRAS, Ildar Baymuratov and Nguyen Than, ITMO University and Nikolay Mustafin, SPbETU "LETI", Russia	
13:15	15m	Linear and Nonlinear Chebyshev Iterative Demodulation Algorithms for MIMO Systems with Large Number of Antennas, by Anastasia Stepanova and Denis Pankratov, MTUCI, Russia	Scientific and Methodological Foundations of Decomposition and Analysis of the Interaction of Processes in the Life Cycle of High-tech Integrated Control Systems, by Aleksander Kubankov, MTUCI and Sergey Kozlov, Federal Research Center "Computer Science and Control" RAS, Russia	
13:30	15m	Non-linear Ordered Precoding with Limited Feedback for Multiuser MIMO Systems, by Vitaly Kreyndelin, Alexey Smirnov and Taoufik Ben Rejeb, MTUCI, Russia	On Content Models for Proximity Services, by Dmitry Namiot, Moscow State University, Russia and Manfred Sneps-Sneppe, Ventspils University College, Latvia	
13:45	15m	A New Algorithm of Iterative MIMO Detection and Decoding Using Linear Detector and Enhanced Turbo Procedure in Iterative Loop, by Mikhail Bakulin and Vitaly Kreyndelin, MTUCI, Andrey Rog, GlobalInformService, Dmitry Petrov, RUDN University and Sergei Melnik, Central Scientific Research Institute of Communication, Russia	Reserved	
14:00	1h	**Lunch**		
Session: Next Generation Networks III **Room:** Main Conference Hall Chairman: Manfred Sneps-Sneppe			**Session:** LBS and e-Tourism **Room:** Auditorium 1 Chairman: Dmitry Korzun	

15:00	15m	Synthesis of Real Weyl-Heisenberg Signal Frames with Desired Frequency-Time Localization, by Valery Volchkov, Vladimir Sannikov and Alexander Mamonov, MTUCI, Russia	A Least Informative Distribution of Ranging Errors in Robust Estimation of Localization, by Georgy Shevlyakov, St. Petersburg Polytechnic University, Russia and Kiseon Kim, Gwangju Institute of Science and Technology, South Korea
15:15	15m	On the Escape Probability Estimation in Large Graphs, by Alexandra Borodina, Petrozavodsk State University, Russia and Konstantin Avrachenkov, Inria Research Centre Sophia Antipolis, France	Context-Driven Tour Planning Service: An Approach Based on Synthetic Coordinates Recommendation, by Alexey Kashevnik and Sergei Mikhailov, SPIIRAS, Russia, Harris Papadakis and Paraskevi Fragopoulou, Technological Educational Institute of Crete, Greece
15:30	15m	A Method To Improve Wide Angle Properties of Microstrip Antenna Arrays, by Olga Iastrebtsova, MTUCI, Russia	Ultra-Wideband Motion Capture System, by Roman Kulikov, Dmitry Tsaregorodtsev, Nadezhda Kukovyakina, Anna Shamina and Varvara Lepetyuha, Radio&Electronics Department of MPEI, Russia
15:45	15m	Research of an Ultra-wideband Distributed Amplifier Based on Field-effect Transistors, by Nikita Shmakov, MTUCI, Russia	Methods and Algorithms of Proactive Control of Complex Dynamic Objects with Disturbance Compensation, by Andrey Gnidenko, Vladislav Sobolevsky and Valeriy Zakharov, SPIIRAS, Russia
16:00	15m	Automated Measuring Complex for Studies of Antenna Arrays, by Andrey Kuchumov, Alexey Trofimov, Veronika Nikolaeva and Pavel Lihtner, MTUCI, Russia	Indoor Navigation Ontology for Smartphone Semi-Automatic Self-Calibration Scenario, by Maksim Shchekotov, Michael Pashkin and Alexander Smirnov, SPIIRAS, Russia
16:15	15m	Mathematical Description of the Correctness of Transmission Numerical Codes for Gaussian Channels in the Rough Segregation of Energy, by Oleg Malofey and Alexander Malofey, North-Caucasus Federal University, Russian, Sergey Rassomahin, Kharkiv National University, Ukraine, Anastasia Shangina and Maxim Deryabin, North-Caucasus Federal University, Russian	*Moving to Main Conference Hall to conference closing*
16:30	15m	**Official closing of the 24th FRUCT conference, Main Conference Hall**	

Thank you and welcome to the 25th FRUCT in Helsinki, Finland on November 5-8, 2019!

Authors of the selected FRUCT conference papers will be invited to publish extended version of the paper in the partner journals. If you are interested in this opportunity please express it clearly to the chair of your session. The list of partner journals is as follows:

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INTERNATIONAL JOURNAL OF **Embedded and Real-Time Communication Systems**

Authors of the best papers of FRUCT conference can get invitation to **FREE of charge** publish extended version of the paper in the International Journal of Embedded and Real-Time Communication Systems (IJERTCS) (ISSN 1947-3176, Scopus indexing, etc.).

sensors

Authors of the best papers of FRUCT conference can get invitation to publish extended version of the paper in the Sensors Journal (impact factor 2.677, Scopus indexing, etc.) with **10% discount**.

Sailfish Mobile OS RUS Days in Moscow: Training and Meetup

Date: 9 & 11 April 2019
Sailfish Mobile OS RUS Days Chair: Kirill Chuvilin

Place: Congress Center MTUCI
Aviamotornaya St 8, Building 39, Moscow, Russia

Program of the Sailfish Mobile OS RUS in Moscow consists of 3 events: Sailfish Mobile OS RUS training for beginners; the keynote talk on Russian Trusted Mobile OS: Goals, Technologies, Opportunities for Cooperation; and the developers Meetup. The events will be held in **Russian language**, free of charge, but participants shall register at www.fruct.org/SailfishOS24.

The training focuses on the basics of mobile application development for Sailfish Mobile OS RUS using Qt, QML, and C++. Training participants will become familiar with the Qt and Sailfish Silica technologies and its capabilities, learn how to create interfaces using QML, interact with the database, multimedia, and Nemo plugins, and also get acquainted with the structure of Sailfish applications.

C++ and JavaScript knowledge is welcome. We ask participants to bring their own laptops for practical programming tasks. We advise to install Sailfish IDE before the training (https://sailfishos.org/wiki/Application_SDK_Installation). If you couldn't install Sailfish IDE before the training then during first exercise breaks the participants will have the opportunity to install the IDE with the help of a trainer.

9-го и 11-го апреля мы приглашаем всех желающих принять участие в тренинге и митапе, посвящённом операционной системе Sailfish Mobile OS RUS, проводимом при поддержке компании «Открытая мобильная платформа». Ключевые технологии: Qt, QML, C++, Linux, D-Bus, rpm, Sailfish OS.

Тренинг 9-го апреля — это хорошая возможность на практике познакомиться с инструментами и технологиями для разработки мобильных приложений.

Специалисты компании «Открытая мобильная платформа» и ассоциации FRUCT в формате мастер-класса расскажут о том, как используются фреймворк Qt, языки C++ и QML, системные сервисы.

ОТКРЫТАЯ МОБИЛЬНАЯ ПЛАТФОРМА

Program

April 9 (Tuesday)

Congress Center of Moscow Technical University of Communications and Informatics, Aviamotornaya St 8, Bld. 39

11:00	30m	**Conference Registration, Lobby 1st floor**
Session: Sailfish Mobile OS RUS training for beginners in Russian **Room:** Auditorium 1 Trainers: Ksenia Lagutina, Svetlana Burikova and Kirill Chuvilin		
11:30	30m	Вводная лекция о Sailfish Mobile OS RUS и инструментах разработки / Introductory: Sailfish Mobile OS RUS and development tools
12:00	50m	Язык QML, модули QtQuick и Sailfish.Silica / QML, QtQuick modules and Sailfish.Silica
12:50	15m	Перерыв
13:05	40m	Модели, представления и делегаты (Лекция и практика) / Models, views and delegates
13:45	1h	**Перерыв / Break (участники могут пообедать или провести настройку среды разработки / time to have lunch and setting up the development environment)**
14:45	45m	Диалоги и меню / Dialogs and menu
15:30	45m	Интеграция C++ и QML, работа с мультимедиа / Integration of C ++ and QML, multimedia
16:15	15m	Перерыв
16:30	45m	Уведомления и DBus / Notifications and DBus
17:15	45m	Работа с базой данных / Database
18:00	30m	Работа с рисунками: QML Canvas / Drawings: QML Canvas
18:30	30m	**Вопросы и ответы / Q&A session. Завершение Sailfish Mobile OS RUS тренинга / end of training.**

Митап 11-го апреля будет интересен как разработчикам, так и представителям академического сообщества. На нём будут представлены доклады как об активностях, связанных с Sailfish Mobile OS RUS, в том числе образовательных проектах, так и о технических решениях, которые потребовались и используются для развития доверенной мобильной ОС на базе Linux и экосистемы приложений.

Что можно узнать на тренинге и митапе:

- Как происходит разработка приложений для Sailfish Mobile OS RUS.
- Какую помощь можно получить при реализации своего проекта.
- Что включает в себя набор навыков разработчика на Qt.
- Какую помощь можно получить для создания курса по мобильной разработке в вузе.
- Как происходит проектирование интерфейса пользователя, какие инструменты для этого используются.
- Зачем и как подписывать бинарные файлы в rpm-пакетах.

Программа тренинга устроена так, чтобы участники вместе с тренерами по шагам разработали приложение заметок, поддерживающих как текстовые данные, так и мультимедиа.

Каждый шаг сопровождается необходимой справкой об используемых API и подходах, а также содержит практическую часть.

Для участия в тренинге будут полезны, но не обязательны, навыки использования языков C++ и JavaScript.

Мы рекомендуем всем участникам принести ноутбуки с установленным Sailfish OS SDK. Подробные инструкции по установке можно найти на странице www.fruct.org/SailfishOS24. Если не получится установить SDK до тренинга, это можно будет сделать с помощью инструктора в начале тренинга.

На митапе в дружной обстановке пройдёт обсуждение интересных задач и их решений, которые возникают при развитии Sailfish Mobile OS RUS, экосистемы приложений и сообщества разработчиков. Он включает несколько тем, каждая из которых — это рассказ специалиста о своём опыте и обсуждение вопросов и предложений.

Перед митапом на общей секции конференции пройдёт keynote "Linux-based Trusted Mobile OS: Goals, Technologies, Opportunities for Cooperation". Мы рекомендуем его посетить, чтобы познакомиться с целями и задачами, с которыми имеет дело компания «Открытая мобильная платформа». На митапе можно будет в более комфортной обстановке обсудить содержание доклада с его автором и другими сотрудниками компании.

ОТКРЫТАЯ МОБИЛЬНАЯ ПЛАТФОРМА

April 11 (Thursday)

Congress Center of Moscow Technical University of Communications and Informatics, Aviamotornaya St 8, Bld. 39

15:00	45m	**Keynote talk: Linux-based Trusted Mobile OS: Goals, Technologies, Opportunities for Cooperation**, by Kirill Chuvilin, Open Mobile Platform LLC, Russia **Room:** Main Conference Hall
15:45	15m	**Coffee break, Lobby 2nd floor**
Session: Sailfish Mobile OS RUS developers Meetup in Moscow **Room:** Auditorium 2 Chairman: Kirill Chuvilin		
16:00	10m	Открытие митапа, представление докладчиков, Кирилл Чувилин, Открытая мобильная платформа
16:10	20m	IT-образование профессиональных разработчиков на Qt: методы, инструменты, возможности сотрудничества, Бурикова Светлана, Открытая мобильная платформа
16:30	10m	Опыт обучения разработке приложений для Sailfish Mobile OS RUS, Лагутина Ксения, FRUCT, ЯрГУ
16:40	20m	Проектирование и прототипирование графических интерфейсов для Sailfish Mobile OS RUS, Андрей Жилин, Открытая мобильная платформа
17:00	20m	Реализация подписи пакетов и исполняемых файлов в Sailfish Mobile OS RUS, Дмитрий Герасимов, Открытая мобильная платформа
17:20	10m	Начало свободного обсуждения
17:30	2.5h	**FRUCT24 Demo & Poster Session combined with Social Event**

Training: SPARQL Event Processing Architecture (SEPA)

Dates: 9 - 10 April 2019
Trainers: Luca Roffia, Francesco Antoniazzi, Fabio Viola

Place: Congress Center MTUCI
Aviamotornaya St 8, Building 39, Moscow

Welcome to two days training on SPARQL Event Processing Architecture. The training is free of charge. The training is delivered by experts of ARCES Center of University of Bologna (Italy). The training language is English.

Participants are introduced to the SPARQL Event Processing Architecture (SEPA) as enabling technology for the development of distributed and context-aware Dynamic Linked Data applications. SEPA is a publish-subscribe architecture designed to support information level interoperability. The architecture is built on top of a generic SPARQL endpoint where publishers and subscribers use standard SPARQL Updates and Queries. Notifications about events (i.e., changes in the RDF knowledge base) are expressed in terms of added and removed SPARQL binding results since the previous notification. For more information please refer the project web site: https://site.unibo.it/wot/en and the GitHub repository: https://github.com/arces-wot/SEPA.

Training Participants are suggested to bring their own laptops on the second day of the training so that they can directly experiment in the class. This part of the training will be very practical with hands-on-code.

Requirements for the initial level of knowledge: at least a basic knowledge of RDF and SPARQL is required. We specifically recommend attending the training to peoples that have experience with SMART-M3 platform.

Program

April 9 (Tuesday)
Congress Center of Moscow Technical University of Communications and Informatics, Auditorium 2

14:30	30m	**Welcome coffee**, 1st floor lobby
Session: Appetizers **Room:** Auditorium 2		Trainer: Luca Roffia
15:00	45m	Dynamic Linked Data and IoT – from Linked Data to the Web of Things
15:45	10m	Break
15:55	45m	Linked Open Sensor Data - from MQTT raw sensor data to interoperable
16:40	10m	Break
16:50	45m	Protocols and architecture – a deep insight into the SEPA broker and the SPARQL 1.1 Secure Event protocol (an extension of the SPARQL 1.1 protocol)
17:35	10m	Break
17:45	45m	Extensions – NGSI-LD & Linked Data Notifications
18:30	30m	**Q&A session end of the first day of the training**

April 10 (Wednesday)
Congress Center of Moscow Technical University of Communications and Informatics, Auditorium 2

Session: Main Course **Room:** Auditorium 2		Trainer: Francesco Antoniazzi and Fabio Viola
09:15	45m	Setup – all you needed to play with (and contribute to) SEPA, by Francesco Antoniazzi
10:00	10m	Break
10:10	45m	Tools – from the SEPA dashboard + JSAP (JSON SPARQL Application, by Fabio Viola
10:55	10m	Break
Session: Desserts **Room:** Auditorium 2		Trainer: Francesco Antoniazzi and Fabio Viola
11:05	45m	APIs – explained by examples covering Java, JavaScript, Python and C languages with emphasis on security, by Fabio Viola
11:50	10m	Break
12:00	45m	Cocktail – enabling Web of Things discovery and interaction, by Francesco Antoniazzi
12:45	15m	**Q&A session. End of SEPA training.**

The 2nd International Workshop on Semantic Audio and the Internet of Things (ISAI 2019)

Dates: 10 April 2019
Workshop Chair: Gyorgy Fazekas

Place: Congress Center MTUCI
Aviamotornaya St 8, Building 39, Moscow

Semantic Audio is a research area devoted to the application of Semantic Web technologies to music and audio in general. The extraction of meaningful information through audio analysis yields metadata that different application areas may take advantage of. Music information retrieval, environmental sound recognition and event detection, audio production, gaming and intelligent live performance tools such as smart instruments are a few examples among numerous applications in this domain. A wider research area, with a stronger link with Semantic Audio is the Internet of Things. The latter may exploit Semantic Audio methodologies to process audio signals produced by sensors, the main building blocks of IoT applications, for instance, in environments such as smart buildings or smart cities. Vice versa, Semantic Audio may benefit from IoT and its native propensity to interoperability, as in the case of the Internet of Musical Things (IoMuT), to explore new ways of producing and accessing musical content, or new ways of using audio for sensing and control in smart environments.

Program

April 10 (Wednesday)

Congress Center of Moscow Technical University of Communications and Informatics, Aviamotornaya St 8, Bld. 39

14:00	1h	**Keynote talk:** Ontology Mediated Semantic Audio Services and Applications, by Gyorgy Fazekas, Queen Mary University of London, UK **Room:** Main Conference Hall
15:00	15m	**Coffee break**, Lobby 2nd floor
Session: Workshop on Semantic Audio and the Internet of Things (ISAI19) **Room:** Main Conference Hall Chairman: Gyorgy Fazekas		
15:15	15m	End-to-end Convolutional Neural Networks for Sound Event Detection in Urban Environments, by Pablo Zinemanas, Pablo Cancela and Martín Rocamora, The University of the Republic, Uruguay
15:30	15m	Analysis and Processing of Audio Signals Using Complex Form Representation, by Vladimir Taktakishvili, Alexey Ovchinnikov, Oleg Popov and Valentin Abramov, MTUCI, Russia
15:45	15m	Objective Assessment of the Quality of Transmission and Informativeness of a Speech Signal According to Statistical Parameters, by Vladimir Taktakishvili, Alexey Ovchinnikov, Oleg Popov and Valentin Abramov, MTUCI, Russia
16:00	30m	**Coffee break**, Lobby 2nd floor

Demos/Posters Session of the 24th FRUCT Conference

Time: 11 April 2019, 17:05 – 20:00
Demos/Posters Session Chair: Ilya Paramonov

Place: Congress Center MTUCI
Aviamotornaya St 8, Building 39, Moscow

The Demo section of the 24th FRUCT conference will be combined with the conference social event. The first part is a promotional section to present/introduce demo projects to the public. Presentations will be done following the Pecha Kucha style. Main idea of this section is to make people aware of the demo and become interested to visit the demo stand at the second part of the session. During the second part of demo session teams get a place to install the demo and poster. If you have some special requirements please contact organizing committee by email info@fruct.org.

Pecha Kucha Presentation Format

Pecha Kucha is a presentation technique where a speaker shows a definite number of slides (usually 20 or 15), each for 20 seconds. The slides are changed automatically. The main intention for Pecha Kucha presentation style is to prevent participants from being too verbose and to make their talks more dynamic and impressive.
Pecha Kucha Night is an event where each speaker uses Pecha Kucha presentation, and speakers change each other in non-stop fashion. Initially invented by architects, this kind of event is often used to present creative projects or work; nowadays it is also used for R&D talks too. Pecha Kucha Night format allows all participants to make announcements about their demos in attractive and time-efficient way. That is why we have chosen this format for demo promotion section at FRUCT conference. More information can be found at http://www.fruct.org/demo24.

How to prepare Pecha Kucha presentation

Here is an instruction on how to prepare your Pecha Kucha style presentation for Demo promotion section. Your presentation must contain exactly 6 slides, and each of them will be displayed for 20 seconds. The slides will be changed automatically. The presentation will take exactly 2 minutes (it should be noted that classical Pecha Kucha has 20 slides, but we have to reduce the number due to a large amount of submitted presentations). Provide the information about yourself and your presentation on the first slide (name, institution, title of your presentation).
The main purpose of your talk would be to interest people, so your presentation should make absolutely clear the main ideas of your project and explain what you plan to show at the demo stand. Make your presentation fascinating to attract attendees and avoid technical details in your talk. Reveal one main idea on each slide. Do not overload your slides with information. Remember, that each slide is displayed only for 20 seconds. Place no more than 2 lines of text per slide, or one big picture. Avoid using slide titles. Do not duplicate the same slides in your presentation — it is cheating! If you see that 20 seconds for a particular slide is not enough for you, try to decouple it into the two or more, or omit the details. Do not place “Thank you” or “Q&A” slides in the presentation. Pecha Kucha session does not imply any questions from the auditory. All the questions will be asked afterwards in a poster room. Prepare your speech thoroughly and beforehand. As you have only 20 seconds per slide, it is quite impossible to improvise during the talk. Rehearse your speech several times to be sure in the absence of pauses when you wait for the slide change, or accelerations when you fails to follow your slides. Try to speak in the same pace during all the presentation. It definitely depends on your text, so try to prepare near the same amount of text in speech for each slide.

Check list

- Use exactly 6 slides.
- Place information about yourself and your presentation (name, institution) on the first slide.
- Reveal one main idea on each slide.
- Place no more than 2 lines of text or 1 large image per slide.
- Do not duplicate the same slides, do not place “Thank you” or “Q&A” slides in the presentation.
- Do not use any slide change animation.
- Prepare your speech thoroughly and do not forget to rehearse it.

List of Demos/Posters (*most up to date list + abstracts of all demos/posters are at www.fruct.org/demo24*)

1. **Investigation of the Possibility of Synchronizing Timestamps of Onboard Equipment and Determining the Location of a Spacecraft in Various Types of Orbits Using GLONASS/GPS Navigation Systems**, *by Leonid Kurakhtenkov, Andrey Kuchumov and Fedor Ivandikov, MTUCI*
2. **Satellite Navigation Smartphones in Relative Mode**, *by Vladimir Pudlovsky, Institute of PTREM, Roman Kulikov and Ivan Indrikov, MPEI*
3. **Semantic Information Search Service by Person's Face Photo**, *by Artur Harkovchuk and Dmitry Korzun, Petrozavodsk State University*
4. **Texture Analysis of Lung Cancer on CT Images and Blood Flow Maps: A Potential Prognostic Tool,** *by Serena Baiocco, Domenico Barone, Giampaolo Gavelli and Alessandro Bevilacqua, University of Bologna*
5. **An Interactive Presentation Service for SmartRoom**, *by Nikita Besednyi and Dmitry Korzun, Petrozavodsk State University*
6. **A Low-Cost Indoor Service for Human Recognition**, *by Nikita Bazhenov, Artur Harkovchuk, Sergei Marchenkov and Dmitry Korzun, Petrozavodsk State University*
7. **Application for Determination of User Interaction with the Objects Using a Camera**, *by Vsevolod Averkov and Kirill Kulakov, Petrozavodsk State University*
8. **Cloud-Oriented Intelligent Driver Support System: Dangerous States Recognition in Vehicle Cabin and Recommendation Generation**, *by Alexey Kashevnik, ITMO University, Andrew Ponomarev and Igor Lashkov, SPIIRAS*
9. **Affecting and Identifying Human Emotions through Digital Signage and Microsoft Azure Services**, *by Nikolay Shilov, SPIIRAS, Nikolay Turov and Polina Morozova, ITMO University*
10. **Mobile Application for Cycling Training**, *by Maxim Yatskovskiy, FRUCT MD LLC*
11. **Educational and Research Stand «Smart City Systems» Designing, by Vladislav Dankovtsev**, *Danil Bezumnov, Vladimir Strelnikov, Dmitriy Sichkar and Viktor Sokolov, MTUCI*
12. **QoS Network Parameters Influence on Delivering OTT Video**, *by Alexey Nesterkin and Vladimir Deart, MTUCI*

FOR NOTES

The 24th Conference of Open Innovations Association FRUCT

Program

Moscow, Russia
8-12 April 2019

A special word of thanks goes to the

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CALL FOR PARTICIPATION

25th Conference of Open Innovations

Association FRUCT

Helsinki, Finland, 5-8 November 2019

Overview

FRUCT is a large Pan-European cooperation network that promotes open innovations of academia and industry. FRUCT conference is a high-quality scientific event for meeting academia and business people and setting projects. The average conference is attended by 120+ participants representing over 30 member organizations and guests from other organizations. Participants comes from Russia, Finland, Italy, UK, Denmark, India, Brazil and other countries and industry is primary represented by Dell EMC, Nokia, MariaDB, Intel, Jolla, Open Mobile Platform, etc.
The conference attracts most active and talented students to present their R&D projects, meet people alike, create new teams, and find employers and investors. The conference invites the world-class academic and industrial experts to lecture on the hottest topics. Traditionally the program consists of FRUCT work groups meetings and intensive (half or full day) technology trainings scheduled for Tu. **The main conference program is for Wed-Fri.** It includes regular sessions as well as thematic workshops.
We welcome everybody to submit papers and take part in the conference, share your research and join the FRUCT Association. Thanks to sponsors we traditionally have low registration fee and various discounts can be applied. For further details refer to http://www.fruct.org/cfp and the registration is open at http://www.fruct.org/registration.

List of conference topics

- ✓ Internet of Things and enabling technologies
- ✓ Next Generation Networks, Wireless Technologies, 5G
- ✓ Smart Spaces, Linked Data and Semantic Web
- ✓ Big Data, Data Mining, Data Storage and Management
- ✓ Knowledge and Data Managements Systems
- ✓ Location Based Services: e-Tourism/Logistics/Navigation
- ✓ Open Source Mobile OS: Architectures and Applications
- ✓ Security and Privacy: Applications and Coding Theory
- ✓ Natural Language Processing, Speech Technologies
- ✓ Software Design, Innovative Applications
- ✓ Bioinformatics, e-Health and Wellbeing
- ✓ Sensor Design, Ad-hoc and Sensor Networking
- ✓ Context Awareness and Proactive Services
- ✓ Artificial Intelligence, Robotics and Automation
- ✓ Computer Vision, Image and Video Processing
- ✓ Smart Systems and Embedded Networks
- ✓ Crowdsourcing and Collective Intelligence
- ✓ Intelligence, Social Mining and Web
- ✓ IoT based Water Distribution Management
- ✓ IoT and CPS solutions for societal challenges

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: 16 September 2019 **Early-bird deadline: 19 August 2019**

Notification of acceptance: **7 October 2019** Camera-ready deadline: **14 October 2019**

3. **Poster / Demo proposal:** submission deadline: **28 October 2019**

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). All accepted Full Papers will be included to **IEEE Xplore** (*the application is pending*) and **DOAJ,** and indexed by **Scopus**, **ACM, Web of Science, RSCI/РИНЦ** (as journal publication), **DBLP, etc**. The selected papers get invitations to publish extended papers in the partner journals, e.g., **IJERTCS**. The Full Papers section of the proceedings is included to **Scimago Journal Rank** http://scimagojr.com/journalsearch.php?q=21100305223&tip=sid. FRUCT is **rated by many national libraries, e.g., Norwegian, Danish** (BFI ID 8782540).

Contacts

Paper templates, conference news and other relevant details are available at http://www.fruct.org/conference25. If you get some questions that are not covered at the conference web page, feel free to send email to info@fruct.org.