Program of

The 20th Conference of Open Innovations Association FRUCT and ISPIT 2017 seminar

Saint-Petersburg, Russia
3-7 April 2017

Technopark of ITMO University

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!

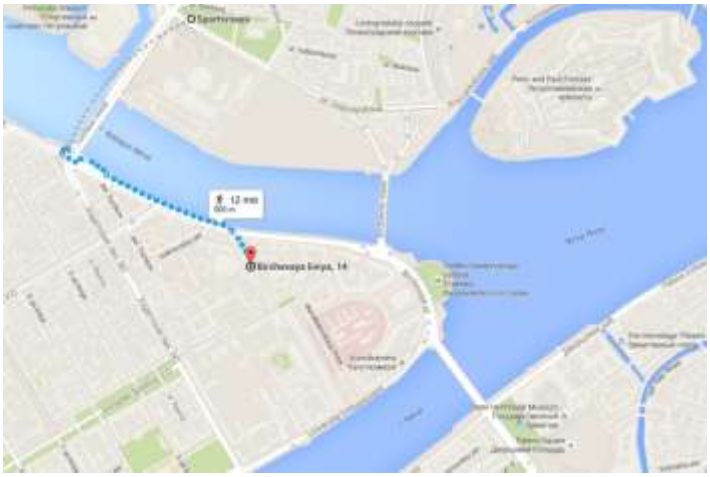
VIVAT ET RESPUBLICA,
ET QUI ILLAM REGIT!
VIVAT NOSTRA CIVITAS,
MAECENATUM CARITAS,
QUAE NOS HIC PROTEGIT

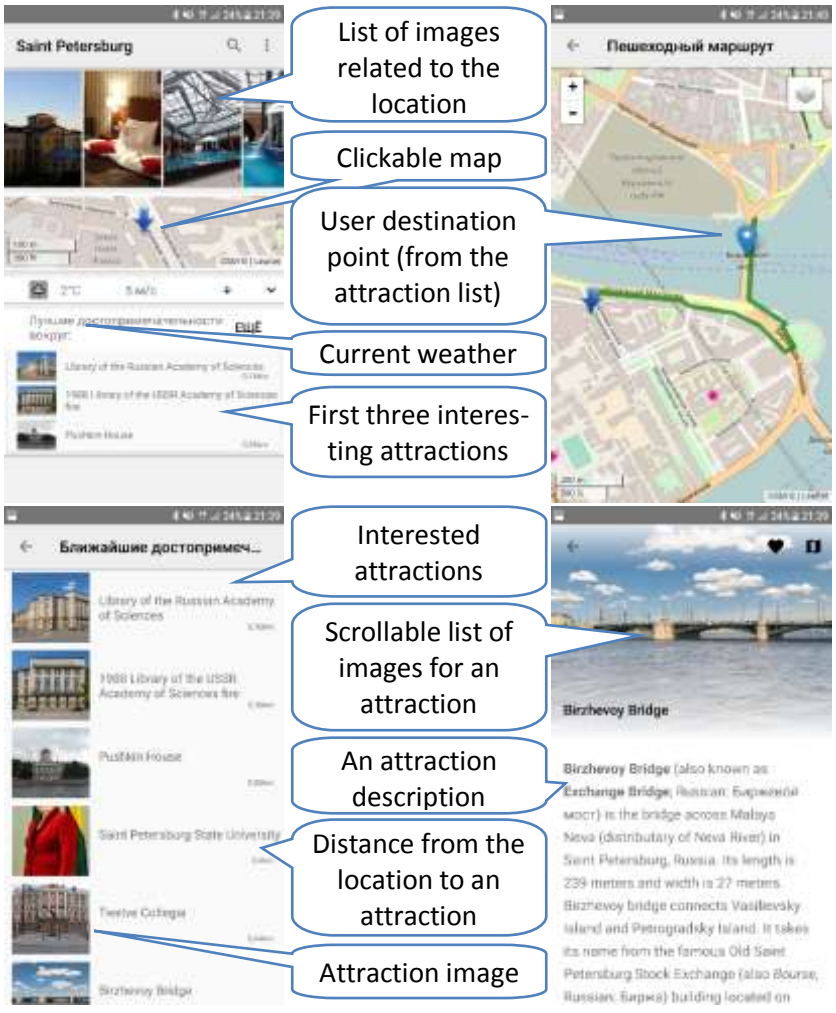
PEREAT TRISTITIA,
PEREANT DOLORES,
PEREAT DIABOLUS,
QUIVIS ANTIBURSCHIUS,
ATQUE IRRISORES!

Practical Information

The main conference sessions are held at Saint Petersburg Electrotechnical University "LETI" Building 5, in the conference rooms at the 1st floor, ul. Prof. Popova, 5. The fastest way to get to the place is by subway to **Petrogradskaya metro** station, then take a walk to Electrotechnical University "LETI", as shown on the left map.

The ISPIT sessions are held at the Technopark of National Research University of Information Technologies, Mechanics and Optics (ITMO), Vasilievskiy island, Birzhevaya liniya, 14, **Sportivnaya metro,** shown on the right map.





Also we recommend using Tourist Assistant – TAIS app - a mobile tourist guide for Android devices. Based on your current location, events and recommendations of other tourists, the app provides the list of attractions around. You can see your location on the map, browse information about attractions located within walking distance, check photos, get weather updates, create route to the selected attractions and a lot more. The app aggregates information from all major sources, e.g., Wikipedia, Wikivoyage, Wikitravel, Google Place, etc.

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Alexey Pticin (ITMO University, Russia)
Anton Spivak (ITMO University, Russia)
Igor Zikratov (ITMO University, Russia)

Local Arrangements

Dmitrii Redka
Maria Kiseleva
Natalia Pyatkina
Olesya Baraniuc
Alla Levina

Publication team

Sergey Balandin
Alla Levina
Tatiana Tyutina

Program of the 20th FRUCT & ISPIT conference

April 3-7, 2017, Saint-Petersburg, Russia

April 3, 5-7: Saint Petersburg Electrotechnical University "LETI" campus, Building 5, ul. Prof. Popova, 5, Rooms: Conference hall of Building 5 (lobby of the 1st floor), PR dep. meeting room (Bld 5), and Auditorium 5230
April 4: Dell EMC Research Center, Sredny prospekt 36, 5th floor
April 6-7: Technopark of National Research University ITMO, Birzhevaya liniya 14, Rooms 103 & 305/1

DATE	TIME	PROGRAM		
3.4.17	09:00-18:00	**Internal meetings of FRUCT working groups**		
	14:00-17:00	MariaDB meeting (***by invitations***), PR department meeting room		
4.4.17	09:00-18:00	**Dell EMC University Open Day,** Dell EMC research center, Sredny prospekt 36		
5.4.17	10:00-11:00	***Guided tour to Popov museum***, at LETI University		
	11:00-12:00	**Conference Registration & Coffee**, near Conference hall of Building 5		
	12:00-14:00	**Opening of the 20th FRUCT conference**, Conference hall of Building 5		
	14:00-14:20	**Coffee break**, near Conference hall of Building 5		
	14:20-16:00	e-Healthcare Solutions I, Conference hall of Building 5		
	16:00-16:20	**Coffee break**, near Conference hall of Building 5		
	16:20-18:00	Software Design I, Conference hall Bld. 5	Robotic systems, Auditorium 5230	
6.4.17	09:30-10:00	**Conference Registration**, next to Conference hall of Building 5		
	10:00-12:00	e-Healthcare Solutions II, Conference hall of Building 5	Emerging Topics I, Auditorium 5230	ISPIT sections, Birzhevaya liniya, 14 (details on page 11)
	12:00-12:20	**Coffee break**, near Conference hall of Building 5		
	12:20-14:20	e-Healthcare Solutions III, Conference hall of Building 5	Image and Video processing, Auditorium 5230	
			Smart Spaces and Internet of Things, Auditorium 5230	
	14:20-15:30	**Lunch break**	***Guided tour to Popov museum***	
	15:30-17:30	Network Technologies, Conference hall of Building 5		
	17:30-17:50	Demo pitches in Pecha Kucha format, Conference hall of Building 5		
	17:50-18:00	Preparation to Demo Session, Banquet hall of Building 5		
	18:00-21:00	**Demo Session and Social Event**, Banquet hall of Building 5		
7.4.17	09:30-10:00	**Conference Registration**, next to Conference hall of Building 5		
	10:00-11:40	Software Design II, Conference hall of Building 5	Business Informatics, Auditorium 5230	ISPIT sections, Birzhevaya liniya, 14 (details on pages 12-13)
	11:40-12:00	**Coffee break**, near Conference hall of Building 5		
	12:00-13:00	Knowledge and Data Management I, Conference hall Bld. 5	Emerging Topics III, Auditorium 5230	
	13:00-14:20	**Lunch break**, near Conference hall of Building 5		
	14:20-15:40	Knowledge and Data Management II, Conference hall of Building 5	Embedded Systems and Networks, Auditorium 5230	
	15:40-16:00	**Coffee break**, near Conference hall of Building 5		
	16:00-17:00	Knowledge and Data Management III, Conference hall of Building 5	Emerging Topics IV, Auditorium 5230	
	17:00-17:10	**Official closing of the 20th FRUCT conference**, Conference hall of Building 5		

Dell EMC University Open Day

Date: 4 April 2017 Place: Dell EMC Research Center, Sredny prospekt 36, 5th floor

We welcome all FRUCT and ISPIT participants to take part in Dell EMC University Open Day that will be held in Dell EMC Research Center. The event language is English. The Dell EMC University Open Day is free of charge but requires separate registration at https://russia.emc.com/campaign/russia/academic-forum/index.htm.

Program

April 4 (Tuesday)
Dell EMC Research Center, Sredny prospekt 36, 5th floor

Seminar: Dell EMC University Open Day **Room:** Dell EMC research center, Sredny prospekt 36, 5th floor		Chair: Gennady Smorodin
09:30	30m	**Registration to Dell EMC University Open Day**
10:00	1.5h	Dell EMC Corporate vision: - IT market global trends - Smart Data are coming - University Business Cooperation
11:30	30m	**Coffee Break**
12:00	1.5h	Project success stories - Smart ecology, Novosibirsk, Russia - Analytic for Mainframe, St Petersburg, Russia - Big Data in Medicine, Moscow and Vladivostok, Russia
13:30	1h	**Lunch Time / Visit to Corporate Data Center**
14:30	1h	Panel discussion: University Business Cooperation Framework: Cross-border approach
15:30	1h	Seminar "Be ready for Data Science 2020"
16:30	30m	**Coffee Break**
17:00	1h	Seminar "Be ready for Storage Tech 2020"
18:00		**Closing of Dell EMC University Open Day**

Special thanks go to Dell EMC External Research & Academic Partnerships and Dell EMC divisions in Saint-Petersburg for sponsoring the event!

Program of the 20th FRUCT conference

April 3-7, 2017, Saint-Petersburg, Russia

April 5 (Wednesday)
Saint Petersburg Electrotechnical University "LETI" campus, Building 5, ul. Prof. Popova, 5

10:00	1h	***Guided tour to Popov museum***, at LETI University	
11:00	1h	**20th FRUCT Conference Registration & Coffee**	
Session: Official opening of the 20th FRUCT conference **Room:** Conference hall of Building 5 Chairman: Sergey Balandin			
12:00	5m	Official opening of the 20th FRUCT conference	
12:05	10m	Welcome words on behalf of Saint Petersburg Electrotechnical University "LETI" and IEEE Russia North West Section, by Dmitry Kholodnyak, Saint Petersburg Electrotechnical University "LETI", Russia	
12:15	15m	Presentation of Dell EMC External Research & Academic Partnerships, by Gennady Smorodin, Dell EMC, Russia	
12:30	15m	Maxscale: Next-Generation Database Proxy, by Timofey Turenko, MariaDB Oy, Finland	
12:45	1h	**Keynote talk:** Role of m-Health in personalized and population healthcare, by Oleg Medvedev, Moscow State University, Russia	
13:45	15m	Sailfish Mobile OS Rus - the first Russian mobile platform, by Kirill Chuvilin, Open Mobile Technologies LLC, Russia	
14:00	20m	**Coffee break**	
Session: e-Healthcare Solutions I **Room:** Conference hall of Building 5 Chairman: Oleg Medvedev			
14:20	20m	Intelligent System for Blood Pressure Monitoring, by Aleksei Anisimov, Alyona Skorobogatova and Anastasiya Sutyagina, Saint-Petersburg Electrotechnical University "LETI", Russia	
14:40	20m	Navigation Infrastructure for People with Disabilities, by Kirill Kulakov, Yulia Zavyalova and Irina Shabalina, Petrozavodsk State University, Russia	
14:50	20m	Isometric-based Method for Hardware Automated Diagnostic of Functional Status of Central Nervous System, by Nikolay Safiannikov, Olga Bureneva Saint-Petersburg Electrotechnical University "LETI", and Zoya Aleksanyan, RAS Institute of the Human Brain, Russia	
15:20	20m	iPatient in Medical Information Systems and future of Internet of Health, by Olga Kolesnichenko, Security Analysis Bulletin, Gennady Smorodin, Dell EMC External Research and Academic Alliances, Andrey Mazelis, Alexander Nikolaev, Lev Mazelis, Vladivostok State University of Economics and Service, Alexander Martynov, Valeriy Pulit, SP.ARM, Yuriy Kolesnichenko, Cybersecurity Technology, Russia, and Sergey Balandin, FRUCT, Finland	
15:40	20m	Algorithms for ECG Analysis in Mobile Cardiac Monitoring System, by Aleksandr Kalinichenko, Svetlana Motorina, Saint-Petersburg Electrotechnical University "LETI", and Alexey Uskov, Medical project CardioQVARK, Russia	
16:00	20m	**Coffee break**	
Session: Software Design I **Room:** Conference hall of Building 5 Chairman: Kirill Chuvilin			**Session:** Robotic systems **Room:** 5230 Chairman: Timofey Turenko
16:20	20m	Source Code Quality Classification Based On Software Metrics, by Petr Vytovtov and Evgeny Markov, Kalashnikov ISTU, Russia	Modern Multi Robot SLAM approaches taxonomy, by Kirill Krinkin, Artyom Filatov and Anton Filatov, Saint-Petersburg Electrotechnical University "LETI", Russia
16:40	20m	Cross-platform App Development for Blended Learning Courses, by Vladimir Pavlov, Vladimir Khryashchev, Natalia Kasatkina and Dmitry Sokolenko, Yaroslavl State University, Russia	Software Platform for Development of Multimodular Robotic Systems with Asynchronous Multithreaded Control, by Arseniy Ivin and Daniil Mikhalchenko, SPIIRAS, Russia
17:00	20m	Method and Tools for Automated End-to-end Testing of Applications for Sailfish OS, by Ilya Paramonov, Andrey Vasilyev and Sergey Averkiev,	Smartphone-Based Adaptive Remote Control Interface for Six-Wheeled Mobile Robot, by Mikhail Mironov, SPIIRAS, and Alexey Kashevnik,

		Yaroslavl State University, Russia	ITMO University, Russia
17:20	20m	Voice Assistant for Sailfish OS, by Petr Vytovtov, Kalashnikov ISTU, Russia	TRIK Studio: Technical Introduction, by Dmitry Mordvinov, Yurii Litvinov and Timofey Bryksin, St.-Petersburg State University, Russia
17:40	20m	An Application of Microservices Architecture Pattern to Create a Modular Computer Numerical Control System, by Maxim Ya. Afanasev, Yuri V. Fedosov, Anastasiya A. Krylova and Sergey A. Shorokhov, ITMO University, Russia	Ontology-Based Indirect Interaction of Users and Mobile Robots for Joint Activities, by Mikhail Petrov, ITMO University, and Alexey Kashevnik, SPIIRAS, Russia
18:00		**Closing of Day 3**	

April 6 (Thursday)
Saint Petersburg Electrotechnical University "LETI" campus, Building 5, ul. Prof. Popova, 5

09:30	30m	**Conference registration**	
Session: e-Healthcare Solutions II **Room:** Conference hall Bld. 5 Chairman: Olga Kolesnichenko			**Session:** Emerging Topics I **Room:** 5230 Chairman: Dmitry Mouromtsev
10:00	20m	The Method for Increasing of EEG Signal Sample Entropy Stability and its Application for Human State Monitoring, Yuliya Zhivolupova and Oleg Tcvetkov, Saint-Petersburg Electrotechnical University "LETI", Russia	Sensor for determining the composition of fluid, by Gennadij Lukyanov, Ilya Kovalskiy, ITMO University, and Vladimir Margolin, Saint-Petersburg Electrotechnical University "LETI", Russia
10:20	20m	Study of Parameters and Properties of Approximate Entropy of EEG at Various Anesthesia Stages, by Anastasya Miganko, Saint-Petersburg Electrotechnical University "LETI", Russia	Problems of Trajectory Building During Laser CNC Processing, by Maxim Ya. Afanasev, Yuri V. Fedosov, Anastasiya A. Krylova and Sergey A. Shorokhov, ITMO University, and Sergey V. Akimov, The Bonch-Bruevich Saint-Petersburg State University of Telecommunications, Russia
10:40	20m	Improving the Design of Arterial Blood Pressure Monitor, Alyona Skorobogatova, Anastasiya Sutyagina and Aleksei Anisimov, Saint-Petersburg Electrotechnical University "LETI", Russia	Synthesis of Neurocontroller for Multirotor Unmanned Aerial Vehicle Based on Neuroemulator, by Sergey Andropov, Mikhail Budko, Marina Budko and Alexei Guirik, ITMO University, Russia
11:00	20m	The Improvement of mHealth Technologies Using AFE-based Integrated Devices, by Yulia Bobrova, Saint-Petersburg Electrotechnical University "LETI", Russia	Air Navigation: Optimisation Control of Means Cueing of the Air-Traffic Control System, by Igor Grishin and Rena Timirgaleeva, Kuban State Technological University, Russia
11:20	20m	On the Semantic Approach to Service Development for Socio-Cyber-Medicine Systems, by Dmitry Korzun, Alexander Meigal, Alexander Borodin and Yulia Zavyalova, Petrozavodsk State University, Russia	Generating Trading Long-Term System Rules Using a Genetic Algorithm Based on Analyzing Historical Data, by Dmitry Iskrich and Dmitry Grigoriev, Saint-Petersburg State University, Russia
11:40	20m	Demonstration of a Signal Enhanced Fast Raman Sensor for Human Breath Analysis, by Sebastian Schlüter, Thomas Seeger, University of Siegen, Germany, and Gennadij Lukyanov, ITMO University, Russia	Syntax Description Synthesis Using Gradient Boosted Trees, Arseny Astashkin, Moscow Institute of Physics and Technology, and Kirill Chuvilin, Institute of Computing for Physics and Technology, Russia
12:00	20m	**Coffee break**	
Session: e-Healthcare Solutions III **Room:** Conference hall of Building 5 Chairman: Zafar Yuldashev			**Session:** Image and Video processing **Room:** 5230 Chairman: Vladimir Khtyashchev
12:20	20m	Automated Image Analysis in Multispectral System for Cervical Cancer Diagnostic, Alexandr Motyko, Natalia Obuhova, Saint-Petersburg	On Color-to-Gray Transformation for Distributing Color Digital Images, by Elena Yakovleva, St. Petersburg State University, Valery Gorbachev,

		Electrotechnical University "LETI", Russia, and Uk Kang, Soo-Jin Bae and Dae-Sic Lee, Korean Electrotechnology Research Institute, South Korea	Elena Kaynarova and Ivan Metelev, St.Petersburg State University of Industrial Technology and Design, Russia
12:40	20m	The Method of Analysis Pseudo-phase Portrait in the Problem of Recognition of Biomedical Signals, by Karina Khachatryan, Lyudmila Manilo and Aleksei Anisimov, Saint-Petersburg Electrotechnical University "LETI", Russia	Comparison of Image Quality Assessment Methods for Multi-focused Image Fusion, by Andrey Noskov and Andrey Priorov, Yaroslavl State University, Russia
13:00	20m	Remote Monitoring System for Patients with Musculoskeletal Diseases, by Anna Tatarnikova and Dmitriy Pupynin, SUAI, Russia	The Formation of Synthesized Image Base by Noise Influence Model, by Vasiliy Kirnos, Andrey Priorov and Vladimir Antipov, Yaroslavl State University, Russia
13:20	20m	Prosthesis Control System of the Upper Limb, by Daniil Tomashevich and Yulia Bobrova, Saint-Petersburg Electrotechnical University "LETI", Russia	**Session:** Smart Spaces and Internet of Things **Room:** 5230 Chairman: Dmitry Korzun The Smart-M3 CuteSIB Implementation: Performance Scalability Evaluation, by Andrey Vdovenko, Ivan Galov and Dmitry Korzun, Petrozavodsk State University, Russia
13:40	20m	Studies of the Human Breathing, by Gennadij Lukyanov,Anna Rassadina, Aleksey Voronin, Aleksej Malyshev, ITMO University, Neronov Roman, Modern Medical Technology Medical Holding, Russia, and Thomas Seeger, University of Siegen, Germany	On Internet of Things Education, by Dmitry Namiot, Lomonosov Moscow State University, Russia, Manfred Sneps-Sneppe Ventspils University College, Latvia, and Youseph Daradkeh, Prince Sattam bin Abdulaziz University, KSA
14:00	20m	Wavelet Analysis of Compressed Biomedical Signals, by Andrey Stepanov, The Bonch-Bruevich Saint-Petersburg State University of Telecommunications, Russia	Smart-M3-Driven Smart Space Creation Using a DD-WRT-Based Device, by Sergei Mikhailov, ITMO University, and Alexey Kashevnik, SPIIRAS, Russia
14:20	1.10h	**Lunch break**	
Session: Network Technologies **Room:** Conference hall of Building 5 Chairman: Dmitry Korzun			
15:30	20m	Communication Network for Remote Monitoring of Wind Turbine based on Infrared Camera, by Shahid Hussain and Young-Chon Kim, Chonbuk National University, South Korea	
15:50	20m	Mobile Edge Computing Services for Dynamic Quality of Service Control, by Evelina Pencheva and Ivaylo Atanasov, Technical University of Sofia, Bulgaria	
16:10	20m	On Telecommunication Software Engineering Education, by Manfred Sneps-Sneppe, Ventspils University College, Latvia, Dmitry Namiot and Vladimir Sukhomlin, Lomonosov Moscow State University, Russia	
16:30	20m	Mobile Edge Computing Applications for Connectivity Management, by Evelina Pencheva and Ivaylo Atanasov, Technical University of Sofia, Bulgaria	
16:50	20m	Spectral Efficiency of Uplink SCMA System with CSI Estimation, by Alexander Sergienko and Vyacheslav Klimentyev, Saint-Petersburg Electrotechnical University "LETI", Russia	
17:10	20m	Dynamic Routing and Spectrum Allocation to Minimize Fragmentation in Elastic Optical Networks, Yadi Xu and Young-Chon Kim, Chonbuk National University, South Korea	
Session: Demo Pitches in Pecha Kucha format **Room:** Conference hall of Building 5 Chairman: Ilya Paramonov			
17:30	20m	Pitch presentations of the demos (2min/pitch)	
17:50	10m	**Preparation to Social event combined with Demo & Poster Session**	
Session: Conference social event combined with Demo and Poster session **Banquet hall of Building 5** Chairman: Ilya Paramonov			
18:00	3h	**Demo & Poster Session combined with Social Event**	
21:00		**Closing of Day 4**	

April 7 (Friday)
Saint Petersburg Electrotechnical University "LETI" campus, Building 5, ul. Prof. Popova, 5

09:30	30m	**Conference registration**	
Session: Software Design II **Room:** Conference hall Bld. 5 Chairman: Sergey Balandin			**Session:** Business Informatics **Room:** 5230 Chairman: Alexey Kashevnik
10:00	20m	Development of software for finding cutting and creasing lines on a corrugated cardboard web, by Anton Shabaev, Mikhail Probichev, Sergey Semanov, Petrozavodsk State University, and Ivan Raspopov, "Karton Optima" LLC, Russia	Driver Assistance Systems: State-of-the-Art and Possible Improvements, by Alexander Komzalov, ITMO University, and Nikolay Shilov, SPIIRAS, Russia
10:20	20m	Cellular Neural Network as a Non-linear Filter of Impulse Noise, by Elena Solovyeva, Saint-Petersburg Electrotechnical University "LETI", Russia	A Systematic Review of Proactive Driver Support Systems and Underlying Technologies, by Andrei Taramov, ITMO University, and Nikolay Shilov, SPIIRAS, Russia
10:40	20m	Topic Model Visualization with IPython, by Sergey Karpovich, Mos.ru, Alexander Smirnov, SPIIRAS, and Nikolay Teslya, ITMO University, Russia	Competence Management Systems in Organisations: a Literature Review, by Viktoriia Stepanenko, ITMO University, and Alexey Kashevnik, SPIIRAS, Russia
11:00	20m	Algebraic Bayesian Networks: Probabilistic-Logic Inference Algorithms and Storage Structures, by Anastasia Birillo and Ekaterina Mal'chevskaya, SPIIRAS, and Andrey Zolotin and Nikita Kharitonov, St. Petersburg State University, Russia	Hybrid Recommender Systems: The Review of State-of-the-Art Research and Applications, by Danilova Viktoriia, ITMO University, and Ponomarev Andrew, SPIIRAS, Russia
11:20	20m	Electrical Complex of Combined Power Supply on the Base of Renewables and Hybrid Correction Device, by Boris Abramovich, Yuriy Sychev, Saint-Petersburg Mining University, and Veronika Prokhorova, SUAI, Russia	Neural Networks usage in Ontology Matching: Literature Review, by Pavel Chupryna, ITMO University, and Nikolay Teslya, SPIIRAS, Russia
11:40	20m	**Coffee break**	
Session: Knowledge and Data Management I **Room:** Conference hall of Building 5 Chairman: Nikolay Teslya			**Session:** Emerging Topics III **Room:** 5230 Chairman: Nikolay Shilov
12:00	20m	Interactivity in Multimedia Information Systems for Cultural Heritage, by Borisov Nikolay, Artem Smolin and Zakharkina Valentina, ITMO University, Russia	Oxide heterostructures for photovoltaic cells, by Kristina Elanskaia and Dmitriy Chigirev, Saint-Petersburg Electrotechnical University "LETI", Russia
12:20	20m	Semantic Network for a Smart Museum of Everyday Life History: Construction and Data Mining, by Oksana Petrina, Valentina Volokhova, Svetlana Ialovitsyna, Aleksey Varfolomeyev and Dmitry Korzun, Petrozavodsk State University, Russia	The Tasks of Modeling the Changes in Audiences of Modern Information and Communication Services by Methods of Cellular Automata, by Anton Zarubin, Anastasiia Saveleva, Oleg Kyzyurov, Sergei Pavlov and Innokentii Patrushev, The Bonch-Bruevich Saint-Petersburg State University of Telecommunications, Russia
12:40	20m	Open Services Provider for Supply Chains, by Anton Ivaschenko, Samara National Research University, Pavel Sitnikov, ITMO University, Michael Andreev and Oleg Surnin, SEC "Open Code", Russia	Heat Flux Sensor Based on Ferroelectric, by Ilya Kovalskiy, Gennadij Lukyanov, Sergei Makarov, ITMO University, Russia, and Thomas Seeger, University of Siegen, Germany
13:00	1.20h	**Lunch break**	

Session: Knowledge and Data Management II **Room:** Conference hall Bld. 5 Chairman: Alexander Smirnov			**Session:** Embedded Systems and Networks **Room:** 5230 Chairman: Alexey Syschikov
14:20	20m	Context-Oriented Knowledge Management for Decision Support in Business Socio-Cyber-Physical Networks: Conceptual and Methodical Foundations, by Alexander Smirnov, SPIIRAS, Russia, and Kurt Sandkuhl, University of Rostock, Germany	Computer-Aided Design System for On-board SpaceWire Networks Simulation and Design, by Valentin Olenev, Yuriy Sheynin, Irina Lavrovskaya, Ilya Korobkov, SUAI, Dmitry Dymov, Sergey Kochura and Vadim Shkolniy, JSC "Academician M.F. Reshetnev" Information Satellite Systems", Russia
14:40	20m	The Model of Information Diffusion in Social Networking Service, by Ilya Viksnin, Liubov Iurtaeva, Nikita Tursukov and Aleksandr Muradov, ITMO University, Russia	Visual development environment for OpenVX, by Alexey Syschikov, Boris Sedov, Konstantin Nedovodeev and Sergey Pakharev, SUAI, Russia
15:00	20m	Distributed OAIS-based Digital Preservation System with HDFS Technology, by Igor Nikiforov, Nikita Voinov, Pavel Drobintsev and Vsevolod Kotlyarov, Peter the Great Saint-Petersburg Polytechnic University and Dell EMC, Russia	The components spatial redundancy method based on design space exploration, by Valentin Rozanov and Elena Suvorova, SUAI, Russia
15:20	20m	Fuzzy Model for Analysing Implicit Factor Influence, by Dmitry Nazarov, Dmitry Azarov, Yakov Silin, Svetlana Begicheva, Ural State University of Economics, and Gennady Smorodin, Dell EMC, Russia	Adaptive Q-routing with Random Echo and Route Memory, by Maksim Kavalerov, Yuliya Shilova and Yuliya Likhacheva, Perm National Research Polytechnic University, Russia
15:40	20m	**Coffee break**	
Session: Knowledge and Data Management III **Room:** Conference hall Bld. 5 Chairman: Alexander Smirnov			**Session:** Emerging Topics IV **Room:** 5230 Chairman: Nikolay Shilov
16:00	20m	Influence of Different Feature Selection Approaches on the Performance of Emotion Recognition Methods Based on SVM, by Daniil Belkov, Konstantin Purtov and Vladimir Kublanov, Ural Federal University, Russia	Continuous execution of system dynamics models on input data stream, by Ivan Perl, Alexey Mulyukin and Tatyana Kossovich, ITMO University, Russia
16:20	20m	The Choice between Delta and Shift Operators for Low Precision Data Representation, by Denis Butusov, Timur Karimov, Artur Karimov, Dmitry Kaplun, Saint-Petersburg Electrotechnical University "LETI", Russia, Yennun Huang and Szu-Chuang Li, CITI Academia Sinica, Taiwan	Investigation of the Characteristics of the Radiation of the Microstrip Antenna Based on the Fractal Approach, by Dmitriy Babichev and Viktor Tupik, Saint-Petersburg Electrotechnical University "LETI", Russia
16:40	20m	Personalized Configuration of Immaterial Products, by Tatiana Levashova and Michael Pashkin, SPIIRAS, Russia	Mobile Device Security, Management of Personal and Business Privacy, by Ekaterina Pshehotskaya and Oleg Mikhalsky, Polytechnic University, Russia
17:00	10m	**Official closing of the 20th FRUCT conference, Conference hall of Building 5**	

Thank you and looking forward to see you at the 21th FRUCT in Helsinki on November 6-10, 2017!

Program of the 20th FRUCT ISPIT 2017 seminar

April 6-7, 2017, Saint-Petersburg, Russia

April 6 (Thursday)
Technopark of ITMO University, Birzhevaya liniya 14, Room 103

10:00	1h	**Conference registration**
Session: Opening of the ISPIT 2017 seminar **Room:** 103		Chairman: Alla Levina
11:00	10m	Official addressing of ISPIT 2017 participants
11:10	50m	**Invited talk: Continuous-Time Aspects of Cyber-Physical Security**, by Prof. Cetin Kaya Koc, University of California Santa Barbara, USA
12:00	20m	Presentation of ArzenSystems
12:20	20m	**Coffee break**
12:40	30m	**Invites talk: Universal energy bounds for codes in polynomial metric spaces**, by Dr. Peter Boyvalenkov, Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences, Bulgaria
Session: ISPIT I **Room:** 103		Chairman: Alla Levina
12:50	10m	Some Properties of APN Functions of the Form L1(x^3) + L2(x^9), Where L1 and L2 Are Linear, by Irene Villa, University of Bergen, Norway
13:10	20m	Detection of Stegosystems Using Block Ciphers for Encryption of the Embedded Messages, by Valery Korzhik, Ivan Fedyanin and Ngnyen Duy Cuong, Bonch-Bruevich Saint-Petersburg State University of Telecommunications, Russia
13:30	20m	Data Security and Quality Evaluation Framework: Implementation Empirical Study on Android Devices, by Igor Khokhlov, Leon Reznik, Ashish Kumar, Ankan Mookherjee and Rohan Dalvi, Rochester Institute of Technology, USA
13:50	20m	Symmetric Encyption for Error Correction, by Nikolay Moldovyan, Alla Levina and Sergey Taranov, SPIIRAS and ITMO University, Russia
14:10	20m	On Equivalence of Known Families of APN Functions in Small Dimensions, by Bo Sun, University of Bergen, Norway
14:20	10m	The Technique for Development of Encryption Algorithms with Improved Cryptographic Strength, by Dmitriy Shatokhin, Karaganda State Technical University, Kazakhstan
14:30	30m	**Lunch break**
Session: ISPIT II **Room:** 103		Chairman: Anton Spivak
15:30	20m	Analysis of e-mail Communication Activities for Detecting Patterns of Pathological Behaviour, by Michael Negnevitsky, University of Tasmania, Australia
15:50	20m	An Expert System for Mitigation Actions, by Ilkka Karanta and Mika Rautila, VTT Technical Research Centre, Finland
16:10	20m	On Design of Secure e-Services for Public Authority in the Russian Federation, by Anton Makarov and Andrey Shabunin, Saint-Petersburg State University, Russia
16:30	20m	Data Security Evaluation for Mobile Android Devices, by Igor Khokhlov and Leon Reznik, Rochester Institute of Technology, USA
16:50	20m	Deniable Encryption Protocols Based on Probabilistic Public-Key Encryption, by Nikolay Moldovyan, Andrey Berezin, Anatoly Kornienko and Alexander Moldovyan, SPIIRAS, Saint-Petersburg Electrotechnical University "LETI", and Petersburg State Transport University, Russia
17:10	10m	UEFI BIOS and Intel Management Engine Attack Vectors and Vulnerabilities, by Alexander Ogolyuk and Andrey Sheglov, ITMO University, Russia
17:20	10m	Access Control for Newly Created Objects: Principles, Abstract Model and Implementation, by Alexander Ogolyuk and Andrey Sheglov, ITMO University, Russia
17:30		**Closing the Day**

April 7 (Friday)
Technopark of ITMO, Birzhevaya liniya 14, Rooms 103 & 301/5

09:30	30m	**Conference registration**	
10:00	40m	**Invited talk: Recent Advances in Cryptographic Functions**, by Dr. Lillya Budaghyan, University of Bergen, Norway	
10:40	20m	**Coffee Break**	
Session: ISPIT III **Room:** 103		Chairman: Ilya Lebedev	
11:00	20m	Soft Quantization of the Production's Knowledge bases for Multi-agent Systems, by Svetlana Fomicheva, Norilsk state industrial Institute, Russia	
11:20	20m	Method of person identification based on biometric characteristics of touch screen gestures, by Kirill Leyfer and Anton Spivak, ITMO University, Russia	
11:40	20m	A Concept of Continuous User Authentication Based on Behavioral Biometrics, by Konstantin Kogos, Aleksandr Eremin and Alina Filina, National Research Nuclear University MEPhI, Russia	
12:00	20m	Approaches To Communication Organization Within Cyber-Physical Systems, by Ilya Viksnin, Igor Komarov, Andrei Shlykov, Nikita Schcepin and Roman Patrikeev, ITMO University, Russia	
12:20	20m	Analytical Attack Modeling and Security Assessment based on the Common Vulnerability Scoring System, by Elena Doynikova, Andrey Chechulin and Igor Kotenko, SPIIRAS, Russia	
12:40	20m	**Coffee break**	
Session: ISPIT IV **Room:** 103		Chairman: Ekaterina Bessonova	**Session:** ISPIT V **Room:** 301/5 Chairman: Alexei Guirik
13:00	20m	The optimization method of the Integrated Management System security audit, by Livshitz Ilya, Lontsikh Pawel and Eliseev Sergey, ITMO University, and Irkutsk National Research Technical University, Russia	Network Anomaly Detection using Artificial Neural Networks, by Sergey Andropov, Alexei Guirik, Marina Budko and Mikhail Budko, ITMO University, Russia
13:20	20m	Analysis of the state of information security on the basis of spurious emission electronic components, by Ilya Lebedev, Nurzhan Bazhayev, Mikhail Sukhoparov and Vadim Petrov, ITMO University, Russia	Anomaly Detection In Wireless Sensor Network Of "Smart Home" System, by Aleksandr Nasteka, Anton Kanev, Catherine Bessonova, Denis Nevmerzhitsky, Aleksei Silaev and Aleksandr Efremov, ITMO University, Russia
13:40	20m	A Study of Different Web-Crawler Behavior, by Alexander Menshchikov, Antonina Komarova, Yurij Gatchin, Anatoly Korobeynikov and Nina Tishukova, ITMO University, Russia	Ensuring Data Integrity Using Blockchain Technology, by Alexander Kuzmin, Igor Zikratov, Vladislav Akimenko, Viktor Niculichev and Lucas Yalansky, ITMO University, Russia
14:00	20m	Identification of Executable Files on the basis of Statistical Criteria, by Kseniya Salakhutdinova, Irina Krivtsova and Ilya Lebedev, ITMO University, Russia	Formalization of the Feature Space for Detection of Attacks on Wireless Sensor Networks, by Victoria Korzhuk, Ilya Lebedev, Igor A. Zikratov and Ilya Shilov, ITMO University, Russia
14:20	20m	The method of implementation of the numerical IT-security metrics in management system, by Livshitz Ilya, Lontsikh Pawel and Eliseev Sergey, ITMO University, and Irkutsk National Research Technical University, Russia	Modeling People Behavior in Emergency Situations, by Ilya Viksnin, Roman Patrikeev, Ruslan Gataullin, Alexandr Muradov, Alexey Chechet and Ivan Danilov, ITMO University, Russia
14:40	20m	Localising unsafe software resource usage with typed code model, by Lavrentii Tsvetkov and Anton Spivak, ITMO University, Russia	The Model of the Attack Implementation on Wireless Sensor Networks, by Victoria Korzhuk, Ilya Lebedev, Igor A. Zikratov, Ilya Shilov and Irina Krivtsova, ITMO University, Russia
15:00	30m	**Lunch break**	

Session: ISPIT VI **Room:** 103		Chairman: Alla Levina
15:30	20m	Influence of Features Discretization on Accuracy of Random Forest Classifier for Web User Identification, by Alisa Vorobeva, ITMO University, Russia
15:50	20m	Testing of the Hypothesis in the Research of Computer Incidents on the Basis of the Analysis of Attributes and Their Values, by Igor Pantiukhin, Igor Zikratov, Anna Sizykh and Addy Christian Crosby Nii, ITMO University, Russia
15:10	20m	Reduction of the Feature Space for the Detection of Attacks of Wireless Sensor Networks, by Victoria Korzhuk, Igor Zikratov, Ilya Lebedev, Ilya Shilov and Julia Torshenko, ITMO University, Russia
16:30	20m	SCA as Mobile Security threat, by Alla Levina, Roman Mostovoy and Borisenko Pavel, ITMO University, Russia
16:50		**Social Event**

Demo Session of the 20th FRUCT Conference

Time: 6 April 2017
Time: 18:00 – 21:00

Place: SPb ETU "LETI" campus, Building 5, ul. Prof. Popova, 5
Banquet hall of Building 5

The Demo section of the 20th FRUCT conference will be combined with the demo session of the Regional seminar on Mobile Healthcare, early diagnostics and fitness and 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 during the talk. 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/demo.

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. So, the whole presentation will take exactly 2 minutes (it should be noted that usually Pecha Kucha presentation 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 (*preliminary list based on submissions by March 29, 2017*)

1. ***Voice Assistant for Sailfish OS, by Petr Vytovtov, Kalashnikov ISTU***
2. ***Smart-M3 CuteSIB Demo for a Wireless Router with OpenWrt-Based Firmware, by Sergey Marchenkov, Dmitry Baganov and Dmitry Korzun, Petrozavodsk State University***
3. ***"Drive Safely" – Driver Assistance Application for Android, by Igor Lashkov, ITMO University and Alexey Kashevnik, SPIIRAS***
4. ***Historical app for Mobile Devices, by Roman Mokretsov, Saint-Petersburg Electrotechnical University "LETI"***
5. ***The demo prototype of mobile treatment assistance system for hypertensive patients, by V. Fokin, K. Orlov, A. Platov, Kr. Shevtsova, Y. Zavyalova, Petrozavodsk State University***
6. ***Intelligent Control of Six-Wheeled Mobile Robot for Obstacle Overcoming, Mikhail Petrov, ITMO University, Alexey Kashevnik, SPIIRAS***
7. ***Smart Space Creation Based on Smart-M3 Platform and DD-WRT Mobile Device, Sergei Mikhailov, ITMO University, Alexey Kashevnik, SPIIRAS***
8. ***Uncomplicated and Affordable DIY Smart Home Project «Figaroo Home», by Valery Kirkizh, indie developer (SUAI)***
9. ***Vagrant plugin for cloning virtual machines, by Alexander Kalyuzhny, Saint-Petersburg Electrotechnical University "LETI"***
10. ***Jenkins Job Analysis, by Evgeny Bovykin, SUT***

FOR NOTES

The 20th Conference of Open Innovations Association FRUCT & ISPIT 2017 conference

Program

Saint-Petersburg, Russia
3-7 April 2017

A special word of thanks goes to the

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CALL FOR PARTICIPATION

21st Conference of Open Innovations

Association FRUCT

Helsinki, Finland, 6-10 November 2017

Overview

FRUCT is the largest regional cooperation framework in form of open innovations between academia and industry. FRUCT conferences are attended by the representatives of more than 25 FRUCT member universities from Russia, Finland, Denmark, India, Italy and other countries, industrial experts from Dell EMC, Nokia, MariaDB, Intel, Jolla, Open Mobile Platform, Skolkovo and a number of guests from other companies and universities.

The conference is an R&D forum for the most active students, academic experts, industrial researchers and influential representatives of business and government. The conference invites the world-class academic and industrial researchers to give lectures on the most relevant topics, provides an opportunity for student teams to present progress and results of their R&D projects, meet new interesting people and form new R&D teams. The conference program consists of 3 to 5 intensive (½ or full day) trainings on the most promising technologies, plus 3 days of the main conference.

We warmly welcome all university research teams to participate in the conference, present your research and join the FRUCT Association. IEEE members and representatives of Russian and Finnish universities are entitled to large discounts. Registration to the conference is open at http://www.fruct.org/conference21.

List of conference topics

- Location Based Services, Navigation, Logistics management, e-Tourism solutions
- Mobile Healthcare, e-Health solutions, Wellbeing, Fitness, Automated diagnostics
- IoT, Smart Spaces, Future services: Proactivity, Context Analysis, Data Mining and Big Data services
- Cross-platform software, innovative mobile services, new approaches to application design, innovative UX
- Smart Systems and embedded networks
- Energy efficient design & peripherals integration
- Mobile security, personal and business privacy
- Modern network architectures, Air interfaces and protocols, Emerging wireless technologies
- Mobile multimedia, video services and solutions
- Communications Systems Integration and Modeling

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 200 words, max 5.5 pages)

Submission deadline: 15 September 2017

Notification of acceptance: **2 October 2017** Camera-ready deadline: **9 October 2017**

3. **Poster / Demo proposal:** submission deadline: **3 November 2017**, or can be an extension to the paper

Please follow paper templates that you can find at http://www.fruct.org/cfp.

Publication

All submitted Full Papers will be peer reviewed by the technical committee. Accepted Full papers and Short papers will be published in the FRUCT conference proceeding (ISSN 2305-7254). All accepted Full Papers will be published in **IEEE Xplore**, and indexed by **Scopus** and **DBLP**. Also proceedings of Full Papers are included to **Scimago Journal Rank** http://scimagojr.com/journalsearch.php?q=21100305223&tip=sid. Selected papers will be recommended for CPCI indexing (**Web of Science**) and invited to submit extended version the **IJERTCS** journal (Scopus index journal).

Contacts

Paper templates, conference news and other relevant details are available at http://www.fruct.org/conference21. If you get some questions that are not covered at the conference web page, feel free to send email to info@fruct.org.