

PERSONAL INFORMATION **Alexey Rolich**

## EDUCATION AND TRAINING

01/11/2021 – CURRENT **PhD student in INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)**  
University of Rome "Sapienza"

05/08/2022 –04/01/2023 **Researcher.**  
University of Palermo.

Project "Support Alerting Early Warning" - SAWE, 2017-NAZ-0118 - CUP: G78I18000960007

Under the direction of: Prof.ssa Ilenia Tinnirello.

The activity covered by this assignment is to study the possibility of reducing the transmission delay and improving the reliability of message delivery in heterogeneous LoRa-Iridium networks for emergency monitoring scenarios in remote areas by choosing the optimal start time for data transmission in each period. The result of the work consists of a technical report describing the proposed solution and a set of experimental data evaluating the performance of the proposed solution.

01/11/2015 – 01/11/2019 **RESEARCHER. LECTURER. PhD in Informatics and Computer Engineering.**

National Research University Higher School of Economics

▪ Programme details:

Student identification number: 107724 №4197210

Main field of study for the qualification: **Informatics and Computer Engineering.**

Concentration: **Computer Aided Design.**

- University teaching (3 credits), final grade: 10 (A+)
- Industrial Internet (4 credits), final grade: 10 (A+)
- Methodology of Research (8 credits), final grade: 7 (B+)
- Technologies of Optimal System Design (5 credits), final grade: Passed
- Research field experience (46 credits), final grade: Passed
- Teaching field experience (5 credits), final grade: Passed
- History and philosophy of science (4 credits), final grade: 7 (B+)
- Foreign language (English) (5 credits), final grade: 10 (A+)
- Special discipline "Computer Aided Design" (1 credits), final grade: 9 (A)

- The final exam, final grade: 9 (A)  
The public defence of scientific report, final grade: 8 (A-)  
**GPA: 8,75/10**  
EQF level 8

01/09/2013 – 11/06/2015 **Master in Computers and IT**

National Research University Higher School of Economics

Master's diploma with honours

▪ Programme details:

Student identification number: 107704 №0001000

Main field of study for the qualification: **Computer and IT.**

Master's degree program: **Information Systems and Computer Networks**

- Information security in computers and computer networks, final grade 9 (A)
  - Wireless Sensor Networks, final grade 9 (A)
  - Computer Systems, final grade 8 (A-)
  - Intelligent Systems, final grade 7 (B+)
  - Creative Industries and Cultural Economics, final grade 7 (B+)
  - Optimization methods, final grade 10 (A+)
  - Computer networks and telecommunication system simulation, final grade 7 (B+)
  - Robustness of computational systems and networks, final grade 8 (A-)
  - Networks and telecommunication systems equipment, final grade 8 (A-)
  - Operating systems, final grade 10 (A+)
  - Corporate information systems design, final grade 8 (A-)
  - Advanced topics of informatics and computing techniques, final grade 10 (A+)
  - Software Engineering, final grade 10 (A+)
  - Term paper "Constructor of the Graphical Interfaces for Internet Things", final grade 10 (A+)
  - Scientific and research practice, final grade 10 (A+)
  - Research work, final grade 10 (A+)
  - Scientific workshop, final grade 10 (A+)
- Graduation thesis "Research and development of the models of dynamic user interfaces toolkit for Internet of Things", final grade 9 (A)
- GPA: 8,9**  
EQF level 7

01/09/2008 – 10/07/2013

### Engineer in Computers, Computer Systems and Networks.

National Research University Higher School of Economics

Diploma with honours

- Programme details:

Student identification number: OKC №08697

Main field of study for the qualification: **Computers, Computer Systems and Networks.**

Concentration: **Computer Networks.**

- Algebra and Geometry (4,5 credits), final grade 6 (B-)
- Databases (4,5 credits), final grade 8 (A-)
- Personal and Social Safety (3 credits), final grade 8 (A-)
- Computational Mathematics (4 credits), final grade 8 (A-)
- Global Conflicts of the 20th Century (1 credits), final grade PASSED
- Discrete Mathematics (4,5 credits), final grade 8 (A-)
- Engineering Graphics (3 credits), final grade 6 (B-)
- Foreign Language (10,5 credits), final grade 8 (A-)
- Peripheral Interfaces (5,5 credits), final grade 10 (PASSED)
- Computer Science (4,5 credits), final grade 8 (A-)
- Information Technologies (3 credits), final grade 8 (A-)
- Communication Systems in Networks (3,5 credits), final grade 6 (B-)
- Computer Graphics (4,5 credits), final grade 8 (A-)
- Design-Engineering Maintenance for Manufacturing of Computers (6,5 credits), final grade 10 (A+)
- Cultural Studies (4 credits), final grade 8 (A-)
- Local area networks (3,5 credits), final grade 8 (A-)
- Mathematical Logic and Theory of Algorithms (3 credits), final grade (PASSED)
- Mathematical Analysis (10,5 credits), final grade 6 (B-)
- Methods and Techniques of Information Security (3,5 credits), final grade (PASSED)
- Metrology, Standardization and Certification (3,5 credits), final grade (PASSED)
- Microprocessor Systems (5,5 credits), final grade 8 (A-)
- Modelling and Simulation (4,5 credits), final grade 8 (A-)
- Advanced Information Technologies (5,5 credits), final grade 8 (A-)
- Operating Systems (4 credits), final grade 6 (B-)

- Organization and Planning of Enterprise (2,5 credits), final grade 8 (A-)
  - Computer and Systems Architecture (4 credits), final grade 8 (A-)
  - Foundations of Systems Analysis (5,5 credits), final grade (PASSED)
  - Fundamentals of Control Theory (3,5 credits), final grade 8 (A-)
  - Russian History (4 credits), final grade 8 (A-)
  - Political Science (2 credits), final grade (PASSED)
  - Principles of Law (2 credits), final grade (PASSED)
  - Practical Issues of Business Activity (2 credits), final grade (PASSED)
  - Programming in High-Level Languages (8,5 credits), final grade 8 (A-)
  - Psychology and Pedagogics (2 credits), final grade (PASSED)
  - Religion in the History of Russian Culture (1,5 credits), final grade (PASSED)
  - Network Operating Systems (3,5 credits), final grade 7 (B+)
  - Computer Networks and Telecommunications (5,5 credits), final grade 8 (A-)
  - System Software (5,5 credits), final grade 8 (A-)
  - Decision Making and Decision Support Systems (3,5 credits), final grade 8 (PASSED)
  - Social Philosophy (1,5 credits), final grade (PASSED)
  - Sociology (2 credits), final grade 10 (PASSED)
  - Advanced Course of Mathematics (2 credits), final grade 6 (B-)
  - Circuit Engineering for Computer Technics (6 credits), final grade 8 (A-)
  - Theoretical Foundations of Computer Systems Engineering (2,5 credits), final grade (PASSED)
  - Automata Theory (5,5 credits), final grade 8 (A-)
  - Probability Theory, Mathematical Statistics and Stochastic Processes (3 credits), final grade (PASSED)
  - Information and Coding Theories (5,5 credits), final grade 8 (A-)
  - Programming Technologies (5,5 credits), final grade 8 (A-)
  - Technology of Network Computing (3,5 credits), final grade 8 (A-)
  - Physics (12,5 credits), final grade 8 (A-)
  - Physical Training (2 credits), final grade (PASSED)
  - Philosophy (4 credits), final grade 8 (A-)
  - Eco-Risks and its Prevention (2 credits), final grade 9 (PASSED)
  - Ecology (2 credits), final grade (PASSED)
  - Economics (4 credits), final grade 8 (A-)
  - Electronics and Electric Engineering (7,5 credits), final grade 8 (A-)
  - Computer Science (1 credits), final grade 8 (A-)
  - Programming in High-Level Languages (1 credits), final grade 8 (A-)
  - Automata Theory (1 credits), final grade 8 (A-)
  - Computer and Systems Architecture (1 credits), final grade 8 (A-)
  - Operating Systems (1 credits), final grade 8 (A-)
  - Computer Graphics (1 credits), final grade 8 (A-)
  - Circuit Engineering for Computer Technics (1 credits), final grade 8 (A-)
  - Computer Networks and Telecommunications (1 credits), final grade 8 (A-)
  - Databases (1 credits), final grade 8 (A-)
  - Modelling and Simulation (1 credits), final grade 8 (A-)
  - Microprocessor Systems (1 credits), final grade 8 (A-)
  - Programming Technologies (1 credits), final grade 8 (A-)
  - Technology of Network Computing (1 credits), final grade 8 (A-)
  - Local Area Networks (1 credits), final grade 8 (A-)
  - Decision Making and Decision Support Systems (1 credits), final grade 8 (A-)
  - System Software (1 credits), final grade 8 (A-)
  - Educational Internship (6,5 credits), final grade 8 (A-)
  - Work Experience Internship (6,5 credits), final grade 8 (A-)
  - Gradational Internship (10 credits), final grade 10 (A+)
- **State Examination** in Speciality (1,5 credits), **final grade 10 (A+)**
  - **Graduation thesis** "A Graphical User Interface Toolkit for the Web of Things" (25 credits), **final grade 10 (A+)**

## WORK EXPERIENCE

01/02/2020 – 31/12/2021

**Full time SENIOR LECTURER**

NATIONAL RESEARCH UNIVERSITY "HIGHER SCHOOL OF ECONOMICS",  
SCHOOL OF COMPUTER ENGINEERING  
Tallinskaya st. 34, 123458, Moscow, Russia

**• Main Activities and Responsibilities**

Teaching in the discipline "Computer Science" and "Engineering Graphics" (seminars and workshops) in the first year of educational programs "09.03.01. Informatics and computer technology", "11.03.02. Infocommunication technologies and communication systems" — more than 120 people per year. Scientific supervision of project, term and diploma theses of students of educational programs "09.03.01. Informatics and computer technology", "11.03.02. Infocommunication technologies and communication systems", "01.03.04 Applied mathematics" — more than 40 people per year.

**• Educational Achievements**

- Letter of thanks from the Vice-Rector of the Higher School of Economics (June 2019)
- Acknowledgement from the Higher School of Economics (October 2016).
- Laureate of the Golden HSE prize 2013 in the "Silver Nestling" nomination.
- Best Teacher at NRU HSE 2020, 2019, 2018, 2017.
- Group of high professional potential (personnel reserve of the NRU HSE), Category "New teachers under 30" (2017–2018).
- Average student teaching score in the discipline "Computer Science" in 2020-2021: 4.89 / 5.
- Average student teaching score in the discipline "Computer Science" in 2019–2020: 4.94 / 5.
- Average student teaching score in the discipline "Computer Science" in 2018–2019: 4.95 / 5.
- Average student teaching score in the discipline "CAD systems" in 2018–2019: 4.32/5.
- Average student teaching score in the discipline "CAD systems" in 2017–2018: 4.11/5.
- The actual total teaching load in the 2016/2017 academic year is 797.75 hours, the actual classroom load in the 2016/2017 academic year is 315.25 hours.
- The actual total teaching load in the 2017/2018 academic year is 715.5 hours, the actual classroom load in the 2017/2018 academic year is 364 hours.
- The actual total teaching load in the 2018/2019 academic year is 1290.5 hours, the actual classroom load in the 2018/2019 academic year is 391 hours.
- The actual total teaching load in the 2019/2020 academic year is 1013.72 hours, the actual classroom load in the 2019/2020 academic year is 391 hours.
- The actual total teaching load in the 2020/2021 academic year is 892.46 hours, the actual classroom load in the 2020/2021 academic year is 250.7 hours.
- Conducting open lectures and webinars on the topics: "Internet of Things", "Virtual and Augmented Reality", "Additive Technologies", "Methodology of Innovation" — more than 20 lectures from 2016 to 2021.

**Business or sector *Research, Education, Expertise***

01/09/2016 – 01/02/2019

**Full time ASSISTANT LECTURER IN UNIVERSITY**

NATIONAL RESEARCH UNIVERSITY "HIGHER SCHOOL OF ECONOMICS",  
SCHOOL OF COMPUTER ENGINEERING  
Tallinskaya st. 34, 123458, Moscow, Russia

**• Main Activities and Responsibilities**

Teaching in the discipline "Computer Science" (seminars and workshops) in the first year of educational programs "09.03.01. Informatics and computer technology", "11.03.02.

Infocommunication technologies and communication systems" — more than 120 people per year. Scientific supervision of project, term and diploma theses of students of educational programs "09.03.01. Informatics and computer technology", "11.03.02. Infocommunication technologies and communication systems", "01.03.04 Applied mathematics" — more than 40 people per year.

**Business or sector** *Research, Education, Expertise*

01/09/2013 – 31/12/2021

### Half-time LEADING ENGINEER (ACTING LABORATORY HEAD)

NATIONAL RESEARCH UNIVERSITY "HIGHER SCHOOL OF ECONOMICS",  
SCHOOL OF COMPUTER ENGINEERING  
Tallinskaya st. 34, 123458, Moscow, Russia

#### • Main Activities and Responsibilities

- Leadership of the educational Laboratory of 3D Imaging and Computer Graphics (<https://miem.hse.ru/edu/ce/compgraph/>).
- Monitoring the technical condition of equipment (VR / AR equipment, 3D printers).
- Technical support for the implementation of research and design work of students.
- Demonstration of the technical capabilities of the equipment.
- Interaction with the Information Technologies Department on the provision of software and maintenance of laboratory equipment.
- Perform other work as determined by the management of the Department of Computer Engineering.
- Prototyping and 3D printing as part of the educational process.

#### • Achievements in Administrative Activities

- Author of the master's program "Internet of Things and Cyber-Physical Systems" at the Higher School of Economics. (Work on the methodological support, opening and promotion of the first master's program in Russia "Internet of Things and Cyber-Physical Systems") — 2019.
- Opening and implementation of the IoT Samsung Academy program at MIEM NRU HSE (The annual number of participants is 25 people per year) — 2019–2021 Role: program curator, teacher.
- Curator, head of the methodological commission of the Higher School of Economics and an expert on the jury of the pre-professional Olympiad for schoolchildren (as part of the Moscow Olympiad for schoolchildren) in the areas of "Engineering profile", "IT profile", "Aerospace profile") — 2017–2021.
- Curator, Deputy Chairman of the Methodological Commission of the National Research University Higher School of Economics and an expert of the jury of the All-Russian Olympiad for Schoolchildren "Highest Standard" in the direction of "Electronics and Computing" — 2020–2021.
- Curator, Deputy Chairman of the Methodological Commission of the Higher School of Economics and an expert on the jury of the All-Russian Olympiad for Students "I'm Professional" in the direction of "Internet of Things and Cyber-Physical Systems" — 2018–2021.
- Expert of the jury of the All-Russian competition of studies and projects of schoolchildren "Aerobatics" in the direction of "Technical and engineering sciences" — 2017–2021.
- Expert of the jury of the scientific-practical conference "Engineers of the Future" — 2017–2021.
- Author and teacher of more than 20 educational programs for schoolchildren in the framework of the projects "Engineering class in a Moscow school, IT class in a Moscow school" — 2017–2021.
- Head of the analytical and consulting group for work with applicants at MIEM, NRU HSE (holding open days, advising applicants).
- Curator of the social program Samsung IT School for the development of mobile

applications for Android for schoolchildren in grades 8–11 at the Higher School of Economics.

**Business or sector** *Research, Education, Expertise*

01/09/2019 – 31/12/2021

**Half-time Expert**

NATIONAL RESEARCH UNIVERSITY "HIGHER SCHOOL OF ECONOMICS",  
SCHOOL OF COMPUTER ENGINEERING  
Tallinskaya st. 34, 123458, Moscow, Russia

▪ **Main Activities and Responsibilities**

- Expert in Laboratory of the Internet of Things and Cyber-physical Systems.
- Conducting scientific research in the field of the Internet of things and cyber-physical systems.
- Review and analysis of the subject area.
- Review and analysis of models, methods, algorithms and tools for solving the problem.
- Development of models, methods and algorithms for solving the problem.
- Simulation and experimental research.

▪ **Research Areas**

- Converged Technologies in Industry 4.0. (IoT + VR / AR).
- Energy efficiency of IoT-device interaction.
- Heterogeneous networks using satellite communication channels in the Internet of Remote Things (LoRa-Iridium, etc.)
- Edge/Fog computing.

▪ **Scientific Achievements**

- Published 38 scientific publications, of which 25 in peer-reviewed journals in WoS / Scopus, h-index: 3.
- IEEE member #95494495.
- Surcharge for publication in an international peer-reviewed scientific journal (2020–2022).
- Member of the research and educational group of the National Research University Higher School of Economics "Energy-efficient interaction of the Internet of remote things and cyber-physical systems in an undeveloped network infrastructure" 2019, 2020. (application 19-04-022)
- Member of the research and educational group of the National Research University Higher School of Economics "Development of the foundations of the theory of energy efficient interaction of resource-limited autonomous devices within the paradigm of the Internet of Things" 2017–2018. (application 17-05-0017)
- Member of the research and educational group of the National Research University Higher School of Economics "Theoretical Foundations of Wireless Sensor Networks" 2014–2015, (application 14-05-0064).
- Grant for the winner of the All-Russian competition of youth projects, 2013.
- Grant under the program Participant of the Youth Scientific and Innovative Competition (UMNIK) of the Foundation for Assistance to the Development of Small Forms of Enterprises in the Scientific and Technical Sphere, 2013.
- Grant for the winner of the first stage of the Fourth Open Competition for Innovative Projects of the Program for the Support of Innovative Entrepreneurship of the National Research University Higher School of Economics 2013, 2013.
- Grant for the winner of the second stage of the Fourth Open Competition for Innovative Projects of the Program for the Support of Innovative Entrepreneurship of the National Research University Higher School of Economics 2013, 2013.



- Grant for the winner of the competition. From an initiative to a project of the Higher School of Economics, 2012.

PERSONAL SKILLS

Mother tongue(s) Russian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
Italian	A1	A1	A1	A1	A1

Denis' School, Moscow, Russia.

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
[Common European Framework of Reference for Languages](#)

Digital skills

1. MATLAB.
2. C# / C++ / C.
3. Arduino and Arduino IDE.
4. MS Office – Word, Excel, PowerPoint, Outlook.
5. Google Drive.
6. Work management tools (Trello, Slack).
7. Collaboration Tools (MS Teams, Zoom, Webex, Skype for Business).
8. 3D Printing (Ultimaker S5, Ultimaker S3+, Wanhao Duplicator, Prusa i3, Prism Dual, Picaso 3D-printer).
9. 3D Scanning.
10. Ultimate Cura.
11. Web Development: HTML 5, CSS, JavaScript, PHP, XML, MQTT, DirectIP
12. Knowledge and ability to work with various data types (JSON, GeoJSON, XML, CSV, etc.)
13. TinkerCAD.
14. Soldering and circuit building skills.
15. Basic Unity3D and Unreal Engine.
16. Microcontroller programming (STM32, Raspberry etc)
17. Conducting experimental studies with heterogeneous LoRa-Iridium networks and low Earth orbit (LEO) satellites
18. Ability to manufacture prototypes of experimental setups based on the Iridium 9602 modem (AT commands, SBD messages, etc.)
19. VEINS, SUMO, OMNET++, ns-3

Social skills and competences

1. Critical thinking (by nature).
2. Cross-cultural communication (since high school).
3. Collaboration (since high school).
4. Active listening (since high school).
5. Accepting & giving constructive feedback (since high school).
6. Open-mindedness (by nature).
7. Team player. Puts the interests of the team above his own (by nature).
8. Love to work with students, provides them with all kinds of help and support, is actively promoting and popularizing scientific and technical activities among university students. (Since university).

Organisational skills and competences	<ol style="list-style-type: none"> <li>1. Leader (were acquired during working as acting head of 3D-imaging and computer generated graphics at Higher School of Economics in Moscow).</li> <li>2. Responsibility.</li> <li>3. Trustworthiness &amp; Ethics.</li> <li>4. Fast Decision Making.</li> <li>5. Results Orientation.</li> <li>6. Time-management.</li> <li>7. Project team management skills (10-15 student projects per year).</li> <li>8. Initiative.</li> <li>9. Ability to organize and administer educational activities.</li> </ol>
Artistic skills and competences	<ol style="list-style-type: none"> <li>1. Photography.</li> <li>2. 3D-modeling.</li> <li>3. Like to write academic texts.</li> </ol>
Other skills and competences	<ol style="list-style-type: none"> <li>1. Flexibility.</li> <li>2. Ambitious.</li> </ol>
Driver license	No

ADDITIONAL INFORMATION

Publications and articles submitted **H-index: 4**

- SPIN RISC: [4901-1584](#)
- ORCID: [0000-0001-8699-1084](#)
- ResearcherID: [L-6051-2015](#)
- Scopus AuthorID: [57190175037](#)
- Google Scholar: <https://scholar.google.com/citations?user=18Cz--AAAAAJ>

**Author(s) and title:** A.Rolich, I.Turcanu, A.Vinel, A.Baiocchi "Impact of Persistence on the Age of Information in 5G NR-V2X Sidelink Communications"

**Language:** English

**Publication place:** 21st Mediterranean Communication and Computer Networking Conference (MedComNet)

**Date of publication:** 2023 (in print)

**Author(s) and title:** A.Ulanov, I. Bolshakov, L. Voskov and A. Rolich, "Experimental LoRa Network Power Consumption Model Using Multi-Hops"

**Language:** English

**Publication place:** Moscow Workshop on Electronic and Networking Technologies (MWENT), Moscow, Russian Federation, 2022, pp. 1-7, doi: 10.1109/MWENT55238.2022.9802378.

**Date of publication:** 2022

**Author(s) and title:** A. Rolich, A. Ilyin and L. Voskov, "The study of Machine Learning Scenarios for the Internet of Arctic Things"

**Language:** English

**Publication place:** Moscow Workshop on Electronic and Networking Technologies (MWENT), Moscow, Russian Federation, 2022, pp. 1-7, doi: 10.1109/MWENT55238.2022.9802182.

**Date of publication:** 2022

**Author(s) and title:** L. Voskov, A. Rolich, G. Bakanov and P. Podkopaeva, "Gateway Data Encoding, Packaging and Compression method for heterogeneous IoT-satellite network"

**Language:** English

**Publication place:** 2021 XVII International Symposium "Problems of Redundancy in



Information and Control Systems" (REDUNDANCY), 2021, pp. 34-38

**Date of publication:** 2021

**Author(s) and title:** Aristova U., Rolich A. Y., Staruseva-Persheeva A., Rolich A.O. Digital Museum Transformation: From a Collection of Exhibits to a Gamut of Emotions

**Language:** English

**Publication place:** Digital Transformation and Global Society, 5th International Conference, DTGS 2020 Vol. 1242: Communications in Computer and Information Science. Springer, 2020. doi Ch. 1. P. 419-435

**Date of publication:** 2020

**Author(s) and title:** Bobkov I., Rolich A., Denisova M., Voskov L. Study of LoRa Performance at 433 MHz and 868 MHz Bands Inside a Multistory Building.

**Language:** English

**Publication place:** 2020 Moscow Workshop on Electronic and Networking Technologies (MWENT). IEEE, 2020. P. 1-6.

**Date of publication:** 2020

**Author(s) and title:** Smuseva D., Rolich A. Voskov L., Malahov I. Big data, internet of things, augmented reality: Technology convergence in visualization issues.

**Language:** English

**Publication place:** CEUR Workshop Proceedings Volume 2416. CEUR Workshop Proceedings, 2019. P. 432-444.

**Date of publication:** 2019

**Author(s) and title:** Lyzhin I., Efremov S. G., Rolich A., Voskov L., Abrameshin D. Development of an Educational Kit for Learning IoT.

**Language:** English

**Publication place:** Journal of Physics: Conference Series. 2019. Vol. 1163. P. 1-5.

**Date of publication:** 2019

**Author(s) and title:** Ivan Lysogor, Voskov L., Rolich A., Efremov S. G. Energy efficient method of data transmission in a heterogeneous network of the Internet of things for remote areas..

**Language:** English

**Publication place:** 2019 International Siberian Conference on Control and Communications (SIBCON). Proceedings. Tomsk : Tomsk State University of Control Systems and Radioelectronics (TUSUR), 2019. P. 1-6.

**Date of publication:** 2019

**Author(s) and title:** Ivan Lysogor, Voskov L., Rolich A., Efremov S. G. Study of Data Transfer in a Heterogeneous LoRa-Satellite Network for the Internet of Remote Things

**Language:** English

**Publication place:** Sensors. 2019. Vol. 19. No. 15. P. 1-17.

**Date of publication:** 2019

**Author(s) and title:** Chuvaldin, N., Belogurov, B., Rolich, A., Motajlenko, I. Study of energy harvesting using high frequency emitting for IoT.

**Language:** English

**Publication place:** 2019 International Seminar on Electron Devices Design and Production (SED). IEEE, 2019. P. 1-6.

**Date of publication:** 2019

**Author(s) and title:** Trubochkina N. K., Rolich A. Ju. «Metodika sozdaniya fraktal'nogo stereokontenta dlja avtonomnyh shlemov virtual'noj real'nosti».

**Language:** Russian

**Publication place:** Zapis' i vosproizvedenie ob#jomnyh izobrazhenij v kinematografe, nauke, obrazovanii i v drugih oblastjakh: XI Mezhdunarodnaja nauchno-prakticheskaja

konferencija, Moskva, 18–19 aprlja 2019 g.: Materialy i doklady. M. : IPP «KUNA», 2019. Gl. 9. S. 109-124.

**Date of publication:** 2019

**Author(s) and title:** Fakhrazeev A., Rolich A., Voskov L. Big telemetry data processing in the scope of modern Internet of Things.

**Language:** English

**Publication place:** 2018 Moscow Workshop on Electronic and Networking Technologies (MWENT). Proceedings. M. : IEEE, 2018. P. 1-4.

**Date of publication:** 2018

**Author(s) and title:** Rolich A., Polyakov E. V., Voskov L., Mazhanov M., Kachalova M., Polyakov S. Investigation and development of the intelligent voice assistant for the Internet of Things using machine learning.

**Language:** English

**Publication place:** 2018 Moscow Workshop on Electronic and Networking Technologies (MWENT). Proceedings. M. : IEEE, 2018. P. 1-5

**Date of publication:** 2018

**Author(s) and title:** Smuseva D., Rolich A. Research and software development using AR technology

**Language:** English

**Publication place:** Journal of Physics: Conference Series. 2018. No. 1050. P. 1-13.

**Date of publication:** 2018

**Author(s) and title:** Aristova U., Rolich A., Staruseva-Persheeva A., Zaitseva A.O. The Use of Internet of Things Technologies Within The Frames of The Cultural Industry: Opportunities, Restrictions, Prospects.

**Language:** English

**Publication place:** Digital Transformation and Global Society. Third International Conference, DTGS 2018, St. Petersburg, Russia, 2018, Revised Selected Papers. Part II. Communications in Computer and Information Science 859 / Ed. by D. A. Alexandrov, A. V. Boukhanovsky, A. V. Chugunov, Y. Kabanov, O. Koltsova. Issue 859. Springer, 2018.

**Date of publication:** 2018

**Author(s) and title:** Rolich A. Ju., Zajceva A. O. GRAFICHESKIE INTERFEJSY V INTERNETE VESHHEJ

**Language:** Russian

**Publication place:** Mezhvuzovskaja nauchno-tehnicheskaja konferencija studentov, aspirantov i molodyh specialistov im. E.V. Armenskogo / Pod obshh. red.: A. N. Tihonov, S. A. Aksenov, U. V. Aristova, A. A. Elizarov, V. P. Kulagin, Ju. L. Leohin, A. B. Los', I. S. Smirnov, N. S. Titkova. M. : MIJeM NIU VShJe, 2017. S. 478-479.

**Date of publication:** 2017

**Author(s) and title:** Kazakov V. V., Rolich A. Ju. Sistema upravlenija mediakontentom na baze zerkala s ispol'zovaniem dopolnennoj real'nosti v ramkah koncepcii interneta veshhei.

**Language:** Russian

**Publication place:** Sistemnyj administrator. 2017. № 5. S. 91-95.

**Date of publication:** 2017

**Author(s) and title:** Gimashev L., Kirillovyh, A., Rolich, A. Information systems for practice works on electrical engineering using augmented reality.

**Language:** English

**Publication place:** Actual Problems of System and Software Engineering 2017. Proceedings of the 5th International Conference on Actual Problems of System and Software Engineering Supported by Russian Foundation for Basic Research. Project #17-07-20565 Moscow, Russia, November 14-16, 2017, 408 P. / Ed. by A. R. Cavalli, Alexander Petrenko, Boris Pozin. Vol. 1989. Aachen : CEUR Workshop Proceedings, 2017. P. 157-162.

**Date of publication:** 2017

**Author(s) and title:** Smuseva D., Rolich A., Malahov I., Zaiseva A.O. SOFTWARE DEVELOPMENT FOR PRESCHOOL EDUCATION USING AUGMENTED REALITY ALGORITHMS.

**Language:** English

**Publication place:** Information Innovative Technologies: Materials of the International scientific – practical conference / Ed. by S. U. Uvaysov, I. Ivanov. M. : Association of graduates and employees of AFEA named after prof. Zhukovsky, 2017. P. 548-553.  
**Date of publication:** 2017

**Author(s) and title:** Rolich A. Dynamic reconfiguration of the graphical interfaces for Internet of Things  
**Language:** Russian  
**Publication place:** 2016 International Siberian Conference on Control and Communications (SIBCON). Proceedings. M. : HSE, 2016. P. 7491841-1-7491841-3.  
**Date of publication:** 2016

**Author(s) and title:** A.O. Zaitseva, K.A. Deryabina, A.Y. Rolich. The development of mobile applications for the capturing and visualization of stereo and spherical panoramas  
**Language:** English  
**Publication place:** 2016 Third International Conference on Digital Information Processing, Data Mining, and Wireless Communications (DIPDMWC). M. : IEEE, 2016. P. 324-326  
**Date of publication:** 2016

**Author(s) and title:** Rolich A. Ju. Model' dinamicheskogo rekonfiguriruemogo interfejsa internet-veshhi na mobil'nom ustrojstve  
**Language:** Russian  
**Publication place:** Nauchno-tehnicheskaja konferencija studentov, aspirantov i molodyh specialistov NIU VShJe im. E.V. Armenskogo. Materialy konferencii / Pod obshh. red.: A. N. Tihonov, S. A. Aksenov, U. V. Aristova, L. N. Kechiev, V. P. Kulagin, Ju. L. Leohin, A. B. Los', I. S. Smirnov, N. S. Titkova. M. : MIJeM NIU VShJe, 2016. S. 68-69.  
**Date of publication:** 2016

**Author(s) and title:** Rolich A. Ju., Derjabina K. A., Kovalev A. V. Primenenie CAVE-sistem dlja povyshenija kachestva vysshego obrazovaniya  
**Language:** Russian  
**Publication place:** Virtual'naja i dopolnennaja real'nost'-2016: Sostojanie i perspektivy. M. : GPBOU MGOK, 2016. S. 283-288.  
**Date of publication:** 2016

**Author(s) and title:** Bekoev B. G., Zajceva A. O., Rolich A. Ju. Razrabotka dinamicheskogo konfiguriruemogo jadra trjohmernogo interfejsa s jelementami estestvennogo cheloveko-mashinnogo vzaimodejstvija (NUI)  
**Language:** Russian  
**Publication place:** Virtual'naja i dopolnennaja real'nost'-2016: Sostojanie i perspektivy. M. : GPBOU MGOK, 2016. S. 47-52.  
**Date of publication:** 2016

**Author(s) and title:** Rolich A. Ju., Lyzhin I. G. Integracija tehnologij besprovodnoj peredachi jenergii v programmnoapparatnyj kompleks "Obshhestvennaja rozетка"  
**Language:** Russian  
**Publication place:** Nauchno-tehnicheskaja konferencija studentov, aspirantov i molodyh specialistov NIU VShJe im. E.V. Armenskogo. Materialy konferencii / Pod obshh. red.: A. N. Tihonov, V. N. Azarov, U. V. Aristova, M. V. Karasev, V. P. Kulagin, Ju. L. Leohin, B. G. L'vov, N. S. Titkova, S. U. Uvajsov. M.: MIJeM NIU VShJe, 2015. S. 292-293.  
**Date of publication:** 2015

**Author(s) and title:** Rolich A. Ju. Razrabotka i issledovanie modelej, metodov i algoritmov dinamicheskogo rekonfiguracii interfejsov internet-veshhej  
**Language:** Russian  
**Publication place:** Sbornik tezisov uchastnikov foruma «Nauka budushhego — nauka molodyh» T. 1. M. : Inkonsalt K, 2016. S. 262-265.  
**Date of publication:** 2016

**Author(s) and title:** Fahrazeev A. R., Shherbakov G. P., Rolich A. Ju., Efremov S. G., Voskov L. S. Sistema distancionnogo upravlenija i sbora dannyh dlja provedenija laboratornyh praktikumov v ramkah koncepcii Promyshlennogo Interneta veshhej  
**Language:** Russian  
**Publication place:** Sbornik trudov XV mezhdunarodnoj konferencii NIDays 2016. M. : DMK-press, 2016. S. 444- 446.  
**Date of publication:** 2016

**Author(s) and title:** Rolich A. Ju. Avtomatizacija proektirovanija pol'zovatel'skih interfejsov internet veshhej

**Language:** Russian

**Publication place:** Nauchno-tehnicheskaja konferencija studentov, aspirantov i molodyh specialistov NIU VShJe im. E.V. Armenskogo. Materialy konferencii / Pod obshh. red.: A. N. Tihonov, V. N. Azarov, U. V. Aristova, M. V. Karasev, V. P. Kulagin, Ju. L. Leohin, B. G. L'vov, N. S. Titkova, S. U. Uvajsov. M.: MIJeM NIU VShJe, 2015. S. 107-108.

**Date of publication:** 2015

**Author(s) and title:** Rolich A. Ju., Lyzhin I. G. Integracija tehnologii besprovodnoj peredachi jenergii v programmnoapparatnyj kompleks "Obshhestvennaja rozетка"

**Language:** Russian

**Publication place:** Nauchno-tehnicheskaja konferencija studentov, aspirantov i molodyh specialistov NIU VShJe im. E.V. Armenskogo. Materialy konferencii / Pod obshh. red.: A. N. Tihonov, V. N. Azarov, U. V. Aristova, M. V. Karasev, V. P. Kulagin, Ju. L. Leohin, B. G. L'vov, N. S. Titkova, S. U. Uvajsov. M.: MIJeM NIU VShJe, 2015. S. 292-293.

**Date of publication:** 2015

**Author(s) and title:** Rolich A. Ju., Martjukova E. S., Arzamasova A. I. Internet veshhej: aktual'nost', reshenija, problematika

**Language:** Russian

**Publication place:** Nauchno-tehnicheskaja konferencija studentov, aspirantov i molodyh specialistov NIU VShJe im. E.V. Armenskogo. Materialy konferencii / Pod obshh. red.: A. N. Tihonov, V. N. Azarov, U. V. Aristova, M. V. Karasev, V. P. Kulagin, Ju. L. Leohin, B. G. L'vov, N. S. Titkova, S. U. Uvajsov. M.: MIJeM NIU VShJe, 2015. S. 140-142.

**Date of publication:** 2015

**Author(s) and title:** Rolich A. Ju. Postroenie modeli predmetnoj oblasti dinamicheski rekonfiguriruemyh interfejsov internet - veshhej

**Language:** Russian

**Publication place:** Sbornik nauchnyh statej Vserossijskoj molodezhnoj shkoly seminarov «Aktual'nye problemy informacionnyh tehnologij, jelektroniki i radiotekhniki - 2015» (ITJeR - 2015). Taganrog : Izd-vo NOC ZIS KT Juzhnogo federal'nogo universiteta, 2015. S. 234-240.

**Date of publication:** 2015

**Author(s) and title:** Rolich A. Ju. Programmnyj konstruktor dinamicheskikh pol'zovatel'skih interfejsov dlja Internet veshhej

**Language:** Russian

**Publication place:** Kachestvo. Innovacii. Obrazovanie. 2015. № 4. S. 50-59.

**Date of publication:** 2015

**Author(s) and title:** Bajbikova T. N., Rolich A. Ju. Analiz metodov, algoritmov i sredstv redaktirovanija komp'juternoj grafiki.

**Language:** Russian

**Publication place:** Nauka v sovremennom mire. Materialy IV Mezhdunarodnoj nauchno-prakticheskoi konferencii (5 janvarja 2011 g.): Sbornik nauchnyh trudov. / Pod obshh. red.: G. F. Grebenshnikov. M. :Sputnik+, 2011

**Date of publication:** 2011

**Author(s) and title:** Rolich A. Ju. Avtomatizacija raspredelenija grantovyh sredstv vnutri nauchno-uchebnoj grupy

**Language:** Russian

**Publication place:** Inzhiniring Tehno 2014. Sbornik trudov II Mezhdunarodnoj Nauchno-prakticheskoi konferencii 30 ijunja-1 ijulja 2014 g. T. 1. Saratov : Izdatel'skij dom "Rajt-Jekspo", 2014. S. 172-178.

**Date of publication:** 2014

**Author(s) and title:** Rolich A. Ju. Analiz rynka avtomatizirovannyh sistem dlja obespechenija pol'zovatelej dostupom k jelektrojenergii v obshhestvennyh mestah

**Language:** Russian

**Publication place:** Kachestvo. Innovacii. Obrazovanie. 2014. № 6. S. 50-58.

**Date of publication:** 2014

**Author(s) and title:** Integracija sistemy billinga v programmno-apparatnyj kompleks 'Obshhestvennaja rozетка'

**Language:** Russian

**Publication place:** Nauchno-tehnicheskaja konferencija studentov, aspirantov i molodyh specialistov NIU VShJe. Materialy konferencii / Pod obshh. red.: A. N. Tihonov, V. N. Azarov, U. V. Aristova, M. V. Karasev, V. P. Kulagin, Ju. L. Leohin, B. G. L'vov, N. S. Titkova. M. : MIJeM NIU VShJe, 2014. S. 277-278.

**Date of publication:** 2014

**Author(s) and title:** Rolich A. Ju. Proektirovanie jenergoeffektivnyh pol'zovatel'skih interfejsov internet-veshhej

**Language:** Russian

**Publication place:** Nauchno-tehnicheskaja konferencija studentov, aspirantov i molodyh specialistov NIU VShJe. Materialy konferencii / Pod obshh. red.: A. N. Tihonov, V. N. Azarov, U. V. Aristova, M. V. Karasev, V. P. Kulagin, Ju. L. Leohin, B. G. L'vov, N. S. Titkova. M. : MIJeM NIU VShJe, 2014. S. 50-51.

**Date of publication:** 2014

**Author(s) and title:** Dvornikov A. A., Rolich A. Ju., Volkov I. Ju. Ustrojstvo kontrolja dostupa k jelektroseti v obshhestvennyh mestah s podderzhkoj tehnologii kommunikacii blizhnego polja

**Language:** Russian

**Publication place:** Nauchno-tehnicheskaja konferencija studentov, aspirantov i molodyh specialistov NIU VShJe. Materialy konferencii / Pod obshh. red.: A. N. Tihonov, V. N. Azarov, U. V. Aristova, M. V. Karasev, V. P. Kulagin, Ju. L. Leohin, B. G. L'vov, N. S. Titkova. M. : MIJeM NIU VShJe, 2014. S. 219-220.

**Date of publication:** 2014

**Author(s) and title:** Rolich A. Ju. Graficheskij konstruktor pol'zovatel'skih interfejsov dlja Web'a veshhej

**Language:** Russian

**Publication place:** Distributed computer and communication networks: control, computation, communications (DCCN-2013). M. : Tehnosfera, 2013. S. 294-303.

**Date of publication:** 2013

**Author(s) and title:** Rolich A. Ju. Integracija tehnologii kommunikacii blizhnego polja v programmno-apparatnyj kompleks "Obshhestvennaja rozетка"

**Language:** Russian

**Publication place:** XXI Mezhdunarodnaja studencheskaja shkola-seminar «Novye informacionnye tehnologii». Tezisy dokladov / Otv. red.: A. N. Tihonov, V. N. Azarov, Ju. L. Leohin, N. S. Titkova, S. S. Fomin. M. : MIJeM NIU VShJe, 2013. S. 277-278.

**Date of publication:** 2013

**Author(s) and title:** Rolich A. Ju. Konstruktor pol'zovatel'skih interfejsov dlja Web'a veshhej

**Language:** Russian

**Publication place:** XXI Mezhdunarodnaja studencheskaja shkola-seminar «Novye informacionnye tehnologii». Tezisy dokladov / Otv. red.: A. N. Tihonov, V. N. Azarov, Ju. L. Leohin, N. S. Titkova, S. S. Fomin. M. : MIJeM NIU VShJe, 2013.

**Date of publication:** 2013

**Author(s) and title:** Bajbikova T. N., Rolich A. Ju. Analiz metodov, algoritmov i sredstv redaktirovanija komp'juternoj grafiki.

**Language:** Russian

**Publication place:** Nauka v sovremennom mire. Materialy IV Mezhdunarodnoj nauchno-prakticheskaj konferencii (5 janvarja 2011 g.): Sbornik nauchnyh trudov. / Pod obshh. red.: G. F. Grebenshnikov. M. : Sputnik+, 2011

**Date of publication:** 2011

#### Honours and awards

Personal research grants:

- Surcharge for publication in an international peer-reviewed scientific journal (2020-2022)
- Research grant of Higher School of Economics: "Young Faculty Support Program (Group of Young Academic Professionals)", Category "New Lecturers under 30" (2017-2018)
- Personal research grant for the winner of the All-Russian competition of youth

projects, 2013

- Personal research grant under the program "Participant of the youth scientific and innovative competition" ("U.M.N.I.K.") of the Russian Fund for Assistance to the Development of Small Forms of Enterprises in the Scientific and Technical Sphere, 2013
- Personal research grant for the winner of the first stage of the Fourth Open Competition for Innovative Projects of the HSE Innovative Entrepreneurship Support Fund Program - 2013
- Personal research grant for the winner of the second stage of the Fourth Open Competition for Innovative Projects of the HSE Innovative Entrepreneurship Support Fund Program - 2013
- Personal research grant of the winner of the competition "From initiative to project" National Research University Higher School of Economics, 2012

Collective research grants:

- Collective grant from the HSE Science Foundation "Energy-efficient interaction of the Internet of remote things and cyber-physical systems in the conditions of an undeveloped network infrastructure", 2019-2020 (application No. 19-04-022)
- Collective grant from the HSE Science Foundation "Development of the foundations of the theory of energy-efficient interaction of resource-limited autonomous devices within the paradigm of the Internet of Things", 2017-2018 (application No. 17-05-0017)
- Collective grant from the HSE Science Foundation "Theoretical Foundations Energy-Efficient Wireless Sensor Networks of Wireless Sensor Networks", 2014-2015 (application No. 14-05-0064)

Scholarships:

- Nominal scholarship of an outstanding scientist of the National Research University Higher School of Economics named after A.N. Tikhonov in the field of "Materials and technology of electronic equipment. Information and telecommunication systems and technologies. Applied Mathematics and Computer Simulation", 2016
- V. Potanin Charitable Foundation Scholar, 2015
- Scholarship of the President of the Russian Federation, 2014-2016
- Higher School of Economics (HSE) scholarship for high scientific results, 2012-2015

Other University Awards/Degrees (e.g.: awards in competition, second degree):

- Letter of thanks from the Vice-Rector of the Higher School of Economics (June 2019)
- Acknowledgement from the Higher School of Economics (October 2016).
- Laureate of the Golden HSE prize 2013 in the "Silver Nestling" nomination.
- Best Teacher at NRU HSE 2020, 2019, 2018, 2017.
- Winner of the Golden HSE Prize in the category "Graduate Success in Academic Activity", 2018
- Gold medal for participation in the summer school of the V. Potanin charitable foundation, 2017
- Gratitude for help in organizing the final of the series of educational and competitive programs "Hackathon' Design in the cloud environment AutoDesk Fusion 360 '" within the framework of the educational project of the Moscow Department of Education "University Saturdays" and the open International competition of youth projects "Shape the future! - 2016 ", 2016
- Certificate of Participation Third International Conference on Digital Information Processing, Data Mining, and Wireless Communications (DIPDMWC2016), 2016
- Certificate of the winner of the correspondence round and the participant of the full-time round of the II All-Russian scientific forum "Science of the Future - Science of the Young", 2016
- Co-exhibitor of the All-Russian Science Festival Nauka 0+, 2016
- Co-exhibitor of the International Orthodox Student Forum, 2016
- Certificate of the participant of the All-Russian youth conference "Scientific initiatives and innovations for the development of Russian regions", 2015
- Co-exhibitor of the international forum and technology show "Open Innovations", 2015



- Co-exhibitor of the All-Russian Science Festival Nauka 0+, 2015
- Winner of the All-Russian competition of youth projects aimed at the development of the regions of the Russian Federation "PRO: Region - 2015", 2015
- Participant of the I International Scientific Forum of Young Scientists "Science of the Future - Science of Young", 2015
- Gold medal for participation in the summer school of the V. Potanin charitable foundation, 2015
- II degree diploma for the best scientific and technical work presented at the annual scientific and technical conference of students, postgraduates and young specialists of the Higher School of Economics. E.V. Armensky, 2015
- II degree diploma for the best scientific and technical work presented at the annual scientific and technical conference of students, postgraduates and young specialists of the Higher School of Economics. E.V. Armensky, 2015
- Gratitude for active participation in the Open Festival of Engineering and Industrial Design "INZHPROMFEST-MEPHI", 2014
- Diploma for a significant contribution to work with schoolchildren and the development of scientific and technical creativity of youth, 2014
- Gratitude for participation in the expert assessment of projects of the City competition of engineering student projects for children and youth "From idea to project - 2014", 2014
- Certificate of a participant in the All-Russian competition of youth copyright projects aimed at the socio-economic development of Russian territories "My country is my Russia", 2014
- Certificate of the participant of the exhibition of developments of young scientists at the forum of young scientists U-NOVUS Tomsk, 2014
- Gratitude for active participation in the exhibition at the stand of the Assistance Fund in the framework of the I Youth Forum "Youth of Russia", 2014
- I degree diploma for the best scientific and technical work presented at the annual scientific and technical conference of students, graduate students and young specialists of the Higher School of Economics, 2014.
- Diploma of the laureate of the Golden HSE Prize in the Silver Nestling nomination, 2013
- I degree diploma of the winner of the competition of scientific research works of graduate students in the direction of "Business Informatics", 2013
- Winner's Diploma of the Fourth Open Competition for Innovative Projects of the Program "Fund for Support of Innovative Entrepreneurship" of the National Research University Higher School of Economics-2013, 2013
- Diploma for the best project in the field of energy efficiency and energy saving in the electric power industry within the framework of the All-Russian competition "Youth ideas and projects aimed at improving energy efficiency and energy saving", 2013
- Diploma NTTM 2013 for the project presented at the exhibition, 2013
- Diploma for the best scientific and technical work presented at the XXI International School-Seminar "New Information Technologies", 2013
- Diploma of the winner of the regional stage of the competition My country - My Russia, 2013
- Diploma of the laureate of the competition for the best rationalization proposal in the field of energy saving and energy efficiency among students using information and communication technologies "EnergyIdea" in the nomination "The best rationalization proposal in the field of energy saving and energy efficiency at home", 2013
- Diploma of the winner of the final round of the UMNİK program of the Foundation for Assistance to Small Innovative Enterprises in Science and Technology, 2013
- Diploma for the best scientific and technical work at the MIEM conference of the Higher School of Economics, 2013
- Prize-winner at the Yaroslavl Energy Forum, 2013
- Certificate of the participant of the exhibition of the II Interstate Forum of the CIS Member States "Health of the population is the basis for the prosperity of the Commonwealth countries", 2013
- Co-exhibitor at the exhibition Open Innovations, 2012

**Projects**    Project: "Software for the study of laboratory work on mechanics in virtual reality"

Role: Academic advisor  
Year: 2021

Project: "Development of an interactive VR demonstration of the basics of computer networks"

Role: Academic advisor  
Year: 2021

Project: "Software and hardware complex for the implementation of predictive analytics of the occupancy of garbage containers and management of garbage disposal"

Role: Academic advisor  
Year: 2021

Project: "Development of infrastructure for research and implementation of projects in the field of remote Internet of things based on heterogeneous networks LoRa-Iridium"

Role: Academic advisor, Team lead  
Year: 2021

Project: "Software emulator for IoT devices"

Role: Advisor  
Year: 2021

Project: "Apartment sharing system within the framework of the IoT concept"

Role: Academic advisor  
Year: 2021

Project: "Control system of a ground robotic platform in virtual reality"

Role: Academic advisor  
Year: 2021

Project: "Remote expert support system using augmented reality using MS Hololens"

Role: Academic advisor  
Year: 2021

Project: "VR adaptation of ex-vivo reconstruction of white matter tracts of the brain"

Role: Academic advisor  
Year: 2021

Project: "Software for navigation in MIEM HSE using augmented reality"

Role: Academic advisor  
Year: 2021

Project: "VR simulator for yachtsmen"

Role: Academic advisor  
Year: 2021

Project: "Augmented reality indoor navigation platform"

Role: Academic advisor  
Year: 2021

Project: "Development of a banking services management system in virtual reality"

Role: Academic advisor  
Year: 2020

Project: "Software agents for interaction of end devices with the cloud platform of the Internet of Things"

Role: Academic advisor  
Year: 2020

Project: "Visualization system for data collection and analysis system for digital twins using virtual reality"

Role: Academic advisor

Year: 2020

Project: "Prototype of a registration / tracking system for the location of people at internal corporate events"

Role: Academic advisor

Year: 2020

Project: "Automated system for collecting, processing, executing and tracking 3D printing requests"

Role: Academic advisor

Year: 2020

Project: "Automated testing of the Tinkoff Mobile application"

Role: Academic advisor

Year: 2020

Project: "Development of an electromechanical hand prosthesis using neurointerface technology and a feedback system for use in prosthetics"

Role: Academic advisor

Year: 2020

Project: "VR imaging system for data center"

Role: Academic advisor

Year: 2020

Project: "Heterogeneous data collection system using wireless communication technologies within the framework of the Internet of Things concept"

Role: Academic advisor, Team lead

Year: 2020

Project: "System for monitoring and managing energy consumption of graphical interface elements on mobile devices"

Role: Academic advisor

Year: 2020

Project: "Mathematical modeling of energy consumption of graphical interfaces on mobile devices"

Role: Academic advisor

Year: 2019

Project: "Software for visualizing the operation of antivirus software to protect cyber-physical systems"

Role: Academic advisor

Year: 2019

Project: "Energy-efficient interaction of the Internet of remote things and cyber-physical systems in an undeveloped network infrastructure"

Role: Researcher

Year: 2019 - 2020

Project: "Development of the foundations of the theory of energy-efficient interaction of resource-limited autonomous devices within the paradigm of the Internet of Things"

Role: Researcher

Year: 2017-2018

Project: "Theoretical Foundations Energy-Efficient Wireless Sensor Networks of Wireless Sensor Networks "

Role: Researcher

Year: 2014-2015

Project: "Shared energy consumption system in public places "Public outlet"

Role: CEO

Year: 2012-2018

**Certifications** Innovative capabilities of 3D technologies and their application in education, CROC, 2015