

Albert Efimov (Yefimov)

PhD in Philosophy

Vice President - Director of Research and Innovation Department, Technology Block, Sberbank

Head of the Department of Engineering Cybernetics, National Research Technological University "MISIS"

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Short Biography

Education

- In 1993, graduated from the Faculty of Cybernetics of the Moscow Institute of Radio Engineering, Electronics and Automation with a degree in Applied Mathematics with a Master's degree in Computer Science.
- In 2002, awarded the Chevening Scholarship Program and received a Master in Communication Management from the Strathclyde Graduate Business School (UK).
- In 2012, completed an internship in robotics at the Imperial College of London.
- In 2014, completed a postgraduate course at the Institute of World Economy and International Relations of the Russian Academy of Sciences with a degree in innovation management.
- In 2021, awarded the degree of Candidate of Philosophical Sciences in the specialty "Philosophy of Science and Technology" at the Institute of Philosophy of the Russian Academy of Sciences.
- In 2021, elected a member of the NUST MISIS Academic Council, elected to the Russian Association of Artificial Intelligence.

Roles and Leadership

- Since 1993, he has worked in various Russian companies, from start-ups in the field of telecommunications to the largest European telecom operators, such as the MTS Group and Equant, where he was responsible for the development and execution of an IT strategy.
- In 2011, he moved to the Information Technology Cluster of the Skolkovo Foundation, where he initiated the creation of the first robotics center in Russia. Eventually, it became the major center for the development of robotics in Russia. As a result of his work, the number of startups in the field of robotics increased from a dozen in 2012 to a hundred in 2017.
- In September 2017, he joined the Sberbank team. There he founded the Robotics Laboratory, a leading center for research and innovation in the field of autonomous robotic systems.
- In May 2020, as Vice President and Director, he became the head of the newly established Research and Innovation Department. Responsible for new R&D management processes at Sberbank, improving the efficiency of research units through synergy and systematic involvement of internal and external partners, including universities.
- In 2020, he was elected head of the Department of Engineering Cybernetics at National University of Science and Technology MISIS (QS rating #487).

Research and patents

- Author and co-author of more than 50 scientific publications and patents in the field of innovation, robotics and new technologies. Three patents are among the best inventions in Russia.

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PROFILE

30 years of project and management experience in the field of technological innovation, IT and telecom. Successful leadership of high-risk and complex scientific and technological projects, advanced technological development and management of research and development teams of up to 300 people. Experience in science and education, including own cutting-edge research. Author of more than 50 scientific papers, including 14 patents, 3 patents are among the best inventions in Russia.

ОПЫТ

- 05.2020 – H.B. SBERBANK, Vice President-Director of the Research and Innovation Department**
Creation and maintenance of a continuous and coordinated process of research activities in the Sberbank Group (PJSC Sberbank and SDEs). Technological forecasting and analytics in breakthrough areas.
Involvement of the academic community in Sberbank research.
- More than 300 researchers and engineers in 9 laboratories
 - More than 100 implemented projects with a total economic effect of more than 10B rubles.
 - More than 1B rubles of own budget for research and development.
 - Growth of the patent base from zero to 300+ patents in 2 years. Over 150 inventions annually in Sberbank
 - Sber publishes more than 70 scientific articles annually.
 - Systematic cooperation in research and development with the largest universities in Russia (Higher School of Economics, Moscow State University, Moscow Institute of Physics and Technology, Skoltech, MISIS, MAI, etc.)
 - The first and largest private scientific award in the history of Russia.
 - Coverage of Sber events for the Year of Science and Technology amounted to more than 70 million people.
- 04.2020 – H.B. NUST MISIS, Head of the Department of Engineering Cybernetics**
The leading department for the preparation of IT specialties at the National University of Science and Technology "MISIS", takes 1st place in the MISIS rating in terms of educational preparation. The total number of students is 350 (undergraduate and graduate). The total number of teaching staff is 50 employees. The main specialization is "applied mathematics/computer science".
- 10.2017 – 05.2020 SBERBANK, Head of the Laboratory (Center) of Robotics**
- Creation and management of Russia's largest corporate laboratory for research and development in the field of robotics and artificial intelligence with over 100 engineers with dozens high-risk/high-value projects.
 - During the period of work, a number of unique world-class projects were conceived, implemented and implemented in PROM (information on request).
 - The laboratory has formed a team of researchers who have gained recognition and authority in Russia and in the world (confirmed by cooperation with leading R&D centers such as Microsoft Research).
 - Several laboratory projects were awarded with prizes and awards. Three inventions of the laboratory (in two A. Efimov is a co-author) are included among the best inventions of Russia.
- 01.2011 – 10.2017 SKOLKOVO FOUNDATION, Director of the Technology Competitions Development Department, Founder and Director of Skolkovo Robotics Center**
- For the first time in Russia, the first competitions in the "prize for achievement" (X-Prize) format were launched.
 - In 2014, the first Robotics Center in Russia was created (more than 60 companies).
 - The Skolkovo Robotics conference (2013-2019) was held - more than 25 thousand participants.
 - Russia is among the leaders in service robotics thanks to the efforts of the robotics center according to the International Federation of Robotics.
 - In 2014, the first test route for ground unmanned vehicles was launched in Russia.
 - The total investment in Skolkovo's robotics projects exceeded RUB 1 billion.
- 05.2005 – 01.2011 Mobile Telesystems, Director of IT Strategy and Business Analysis Department**
- Management of the creation and implementation of the IT strategy of the largest integrated mobile operator in Russia and the CIS.
 - Responsibility for all aspects of interaction between IT and business: requirements, finances.
 - Management of strategic programs of projects (consolidation of CRM/billing, integration with COMSTAR).
The first largest project in Russia to consolidate billing systems in Russia (18 million subscribers) was completed.
- 04.2004 – 05.2005 EQUANT (ORANGE), Smart Grid Product Manager**
- Launch of IP-Contact Center for Mary Kay Russia.
- 06.1997 – 03.2004 AEROCOM, Head of Business Development Department**
- Launch of intelligent platforms for fixed communications, development and implementation of CRM systems of our own design.
- 02.1993 – 07.1997 ARIAN, IT manager**

EDUCATION

2019–2020

INSTITUTE OF PHILOSOPHY OF THE RUSSIAN ACADEMY OF SCIENCES.

Awarded the PhD degree (Candidate of Science). The dissertation in philosophical sciences was made on the basis of his own scientific research: *"Philosophical and methodological foundations of post-Turing intelligent robotics."*

2012–2014

INSTITUTE OF WORLD ECONOMY AND INTERNATIONAL RELATIONS OF THE RUSSIAN ACADEMY OF SCIENCES.

Completed postgraduate studies, written a number of highly cited scientific publications.

2002

Strathclyde University (Glasgow, UK), Master's in Communication Management

Winner of the Chevening Scholarship Program. Based on the results of the dissertation, a scientific article was written, which is still cited.

1987 – 1993

Moscow Institute of Radio Engineering, Electronics and Automation, engineer-mathematician

1985 – 1987

2nd Physics and Mathematics School (VTORAYA SHKOLA)

one of the most famous and outstanding physics and mathematics schools in the USSR. Graduated in 1987 with the best grades in mathematics among the graduates.

AWARDS and ACHIVEMENTS

2002 - Recipient of the Chevening Scholarship

2012, 2013, 2014 - Gratitude of the President for the special contribution to the creation of the Skolkovo Innovation Center

2020 – Gratitude of the President for personal contribution to the development of Sberbank

1. Efimov, 2004 - Efimov A.R., Whalley J.L. **Location and Product Bundling in the Provision of Wifi Networks** // Communication and Strategies. 2004. Vol. 53. P.125-135.
2. Efimov, 2019 - Efimov A.R., Semochkin A.N., Zabihifar S. **Object Grasping and Manipulating according to User-defined Method using Key-points** // 12th International Conference on Development in e-Systems Engineering/ IEEE. 2019. P. 454-459.
3. Efimov, 2020 - Efimov A.R. **Post-turing Methodology: Breaking the Wall on the Way to Artificial General Intelligence** //13th International Conference on Artificial General Intelligence. (St. Petersburg, Russia, September 16–19, 2020)/ Artificial General Intelligence. AGI 2020. Lecture Notes in Computer Science. Vol. 12177. Springer. 2020. P. 84-94.
4. Efimov, 2021 - Efimov A.R., Semochkin A.N., Zabihifar S, Seliverstova E.V. **Unreal mask: one-shot multi-object class-based pose estimation for robotic manipulation using keypoints with a synthetic dataset** // Neural Computing and Applications. April 2021. P. 1-18.
5. Efimov, 2021 – Efimov A.R., Dubrovsky D.I., Matveev Ph.M. **Walking Through the Turing Wall** // IFAC PapersOnLine 54-13 (2021) P.215–220.
6. Efimov A.R. **Three Outsourcing Models For The Contact Center Organization**//Technologies and telecommunications. 2005. №2. P. 84-86
7. Efimov A.R **Breakthrough Research Areas In Robotics** // Control Engineering Russia. 2013. № 4. P. 20- 26.
8. Efimov A.R. **Evolution Of The System Of Indicators Of The Effectiveness Of Measures Of State Support Of Innovations On The Example Of The Innovation Center "Skolkovo"** // National interests: priorities and security 2014. № 32(269). P. 22-34.
9. Efimov A.R. **Demand for State Support Measures for Innovative Enterprises in the Russian Information Technology Industry**// Innovations. 2014. №3(185). P. 71-77.
10. Efimov A.R., Ponamarev A.K., Zorin D.N., Psakhye S.G., Gurdal Z, Belov N.G., Azarov A.V., Abaimov S.G. **Key technologies forming the appearance of promising production**// New production technologies: public analytical report/Skoltech. M.: Delo. 2015. P. 17-143.
11. Efimov A.R., Kozyulin V.B. **New Bond - A Car With A License To Kill**//Security Index. 2016. V. 22. № 1 (116). P. 37-60.
12. Efimov A.R. Koziulin V.B. Sun S. Giaka J. **Combat Robots: Threats Considered or Unexpected** // Security Index. 2016. T. 22. № 3-4. P. 79-96.
13. Efimov A.R., Dyuzhina I.G. Tech City UK // **World economy and international relations**. 2017. V. 61. No. 3. P. 94-99.
14. Efimov A.R., Ptitsyn A.V. **Evaluation Of The Performance Of Innovative Companies In Skolkovo** // Public Administration. Electronic Newsletters. 2017. No. 63. P. 356-373.
15. Efimov A.R., Orlov I.A., Aliseichik A.P., Merkulova A.G. **The Relevance Of The Use Of Industrial Exoskeletons To Reduce The Number Of Occupational Diseases Of The Musculoskeletal System Of The Upper Body** // Russian Journal of Occupational Health and Industrial Ecology 2019. No. 7. P. 412-416.
16. Efimov A.R., Stolyarov I.A., Egorov D.A. **Educational robotics through practical experience of eurobot teams** // Abstracts of the 30th International Scientific and Technological Conference «EXTREME ROBOTICS». – SaintPetersburg: OOO "Izdatel'skopoliigraficheskii kompleks "Gangut" Publ., 2019. P.441-446.
17. Efimov A.R **Do Chatbots Dream of Androids? Prospects for the Technological Development of Artificial Intelligence and Robotics**// Russian Journal of Philosophical Sciences 2019. T62. № 7. P. 73-95.
18. Efimov A.R, Alekseev A.Yu., Finn V.K **The Future of Artificial Intelligence: Turing or Post-Turing Methodology?** // Artificial Societies 2019. V. 14. № 4 <https://artsoc.jes.su/s207751800007698-6-1>
19. Efimov A.R **Technological background of Individuality of Human and its Computer imitation**// Artificial Societies 2019. V. 14. № 4. <https://artsoc.jes.su/s207751800007645-8-1/>
20. Efimov A.R. Takh V.H., Sotin A.V. **Research of the amplitudes of movements in large joints of the upper and lower extremities and joints of the spine using industrial exoskeletons**// Russian Journal of Biomechanics. 2020. Volume 24. No. 4. P. 470 - 490.
21. Efimov A.R. Takh V.H., Geregey A.M., Shitova E.S., etc. **Modern methods of safety research and physiological effectiveness of the use of industrial exoskeletons** // Health risk analysis. 2020. No. 3. P. 149 - 159.
22. Efimov A.R. Bukhtiyarov I.V., Geregey A.M. **Industrial exoskeletons as means of ensuring industrial safety. normative and technical regulation** // Industrial Safety. 2020. No. 12. P.53-57.
23. Efimov A.R. **Post-turing methodology: destruction of the wall on the way to general artificial intelligence** // Intelligence. Innovation. Investment. No. 2. 2020. P. 74-80.
24. Efimov A.R., Gonnochenko A.S., Payson D.B., Moroshkin S.D. **Practical application of robots and related technologies in the fight against the COVID-19 pandemic** // Robotics and Technical Cybernetics. Vol.8. No. 2. 2020. P/ 87-100.
25. Efimov A.R, Kuzin R.V., Payson D.B., Tah V.H. **Results Of Experimental Studies Of The Applicability Of Unmanned Aerial Vehicle To Solve Urgent Problems Of Corporate Logistics** // 19th International Conference "Aviation and Cosmonautics". Abstracts of the 19th International Conference. Moscow. 2020. P. 71-72.
26. Efimov A.R., Payson D.B., Pogosyan M.A., Tah V.H., etc. **Experimental Studies Of The Applicability Of Unmanned Aerial Vehicle To Solve Urgent Problems Of Corporate Logistics** // Polyot. No. 7. 2020. P. 15-22.
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28. Efimov A.R., Budanov V.G. **Science And Art In The Digital Age: The Problem Of Synergy** // Philosophical Sciences. 2021. 64(1). P.116-133.
29. Efimov A.R. **How To Predict The Future Of Technology 30 Years Ahead In A Way That Is Useful Today?** // Moscow. Foresight. Hypotheses. Book 3. 2021. P.61-66.
30. Efimov A.R. **Man Of The Future: Transformation Or Complementarity?** // The problem of human transformation in the conditions of the crisis of technogenic civilization. Collection of scientific articles. // Kursk. Publishing house of CJSC "University Book", 2021. P.225-235
31. Efimov A. R., Anokhin . K. V., Novoselov K. S., Smirnov . S. K., Matveev P. M. **AI For Science And Science For AI** // Voprosy Filosofii. 2022. VOL. № 3. P. 93–105.

Albert Efimov's Patents

1. **Gripping Mechanism For Robotic Arm.**
Efimov A.R. etc. Type: utility model patent. Patent number: RU 184884 U1. Publication date: 11/13/2018
2. **Collaborative Robotic Cash Conversion Section.**
Efimov A.R. and others. Type: industrial design patent. Patent number: RU 116987. Publication date: 10/11/2019.
3. **Collaborative Robotic Cash Conversion Section.**
Efimov A.R. and others. Type: industrial design patent. Patent number: RU 116986. Publication date: 10/11/2019.
4. **Method And System For Grapping An Object Using A Robotic Device.**
Efimov A.R. and others. Type: patent for invention. Patent number: RU 2700246 C1. Publication date: 09/20/2019.
5. **Cash Transportation Robotic Device.**
Efimov A.R. and others. Type: utility model patent. Patent number: RU 191889 U1. Publication date: 09/20/2019.
6. **Collaborative Robotic Cash Conversion Section.**
Efimov A.R. and others. Type: invention patent. Patent number: RU 2697316 C1. Publication date: 08/13/2019.
7. **Method And System Of Predictive Avoidance Of A Manipulator's Collision With A Person.**
Efimov A.R. and others. Type: patent for invention. Patent number: RU 2685996 C1. Publication date: 04/23/2019.
8. **Adapter And System For Placing And Delivering Cargo By Unmanned Aerial Vehicles.**
Efimov A.R. and others. Type: patent for invention. Patent number: RU 2739508 C1. Publication date: 12/25/2020.
9. **Automated Control System "Robotic Recalculation Section".**
Efimov A.R. and others. Type: certificate of state registration of the computer program. Certificate number: RU 2020661478. Publication date: 12/25/2020.
10. **Robotic Device For Interacting With Closures.**
Efimov A.R. etc. Type: utility model patent. Patent number: RU 199751 U1. Publication date: 09/17/2020.
11. **Method And System For Creating Text-Based Facial Expressions.**
Efimov A.R. and others. Type: patent for invention. Patent number: RU 2723454 C1. Publication date: 06/11/2020.
12. **Electromechanical Gripper.**
Efimov A.R. and others. Type: utility model patent. Patent number: RU 198037 U1. Publication date: 06/16/2020.
13. **Robotic Bar.**
Efimov A.R. and others. Type: industrial design patent. Patent number: RU 120485. Publication date: 07/09/2020.
14. **Robotic Bar.**
Efimov A.R. and others. Type: industrial design patent. Patent number: RU 120484. Publication date: 07/09/2020.
15. **Robotic Courier.**
Efimov A.R. and others. Type: industrial design patent. Patent number: RU 20288. Publication date: 06/29/2020.
16. **GUI Page Set For The Subject Section State Monitoring.**
Efimov A.R. and others. Patent for industrial design 129727, 09.02.2022. Application No. 2021502524 dated 05/20/2021.
17. **GUI Page Set For The Subject Section State Monitoring.**
Efimov A.R. and others. Patent for industrial design 127978, 10/22/2021. Application No. 2021502523 dated 05/20/2021.