OLEG NEPOMNYASHCHIY

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Google Scholar: https://scholar.google.com/citations?user=JxdeoasAAAAJ

Current Position Professor, Head of the Department of Computer Science, School of Space and Information Technologies.

Research Interests Microprocessor Systems, High-Level Design of VLSI circuit, Embedded Systems, Microelectronics, Digital Systems Design, Aerospace Technologies**.**

Education and Academic Degrees

- 2004 — Krasnoyarsk State University, Russia, Associate Professor
- 2002 — Krasnoyarsk State University, Russia, Ph.D. in Engineering (Russian Candidate of Engineering Sciences)
- 1991 — Krasnoyarsk State University, Russia, Specialist (Engineer) degree in Computer Science

Professional Career

- 2018 — Head of the Department of Computer Science.
- 2017 — Professor at the Department of Computer Science.
- 2013 — Krasnoyarsk Polytechnic Institute, Head of the Scientific Laboratory of Microprocessor Systems.
- 2004 — Krasnoyarsk Polytechnic Institute, Associate Professor.
- 1994 — Krasnoyarsk Polytechnic Institute, Senior Lecturer.
- 1991 — Krasnoyarsk Polytechnic Institute, Engineer.
- 1988 — Krasnoyarsk Polytechnic Institute, Laboratory Assistant.

Recent Publications

- 2020 — Oleg Nepomnyashchiy, F. Kazakov, D. Ostroverhov, A. Tarsov, N. Sirotinina. A neural regulator for efficient control of electric vehicle motors. EAI Endorsed Transactions on Energy Web and Information Technologies. Special Issue: Design and Analysis of Artificial Intelligent Systems using Machine Learning, IoT and Nature-inspired Computing Systems. EAI Endorsed Transactions. 2020.
- 2020 — Nepomnyashcy O.V., Ryzhenko I.N. “High-level synthesis method and software tools for describing VLSI functioning algorithms” /Software Engineering No. 1, 2020, pp. 34–39.
- 2019 — I.N. Ryzhenko, A.E. Lutsenko, O.G. Varygin, O. V. Nepomnyashchiy. Carrier compensation mode implementation in satellite communication channels 2019 International Siberian Conference on Control and Communications (SIBCON) 978-1-5386-5142-1/19/$31.00 © 2019 IEEE DOI: 10.1109/SIBCON.2019.8729665
- 2019 — Oleg V. Nepomnyashchiy, Yuri V. Krasnobaev, Aleksey P. Yablonsky, Vyacheslav V. Potekhin, Natalia J. Sirotinina. Ensuring minimum duration of transient processes in switched voltage regulators with digital control. EAI Endorsed Transactions on Energy Web and Information Technologies. №.19(24): e6. EAI Endorsed Transactions. 2019. doi: 10.4108/eai.16-10-2019.160838
- 2019 — Parallel computing systems: textbook. manual / Sirotinina N. Yu., Nepomnyashchy O. V., Korshun K. V., Vasiliev V. S.. Siberian Federal University, Institute of Space and Information Technologies. Krasnoyarsk, 2019, p. 180. ISBN 978-5-7638-4180-0
- 2018 — Problems of verifying large projects in the end-to-end design of computer systems on a chip. Nepomnyashchiy O., Leshenko S. Anthology of scientific research papers “Space Engineering, Technologies & Exploration”. ECM Space Technologies GmbH, Berlin, Germany, 2018. p.p.181-186
- 2018 — Computer circuitry: textbook. manual / Postnikov A.I., Ivanov V.I., Nepomnyashchiy O.V. Siberian Federal University, Institute of Space and Information Technologies. Krasnoyarsk, 2018, p.285. ISBN 978-5-7638-3701-8
- 2017 — Applied Theory of Digital Systems: textbook. manual / Postnikov A.I., Nepomnyashchiy O.V., Makukha L.V. Siberian Federal University, Institute of Space and Information Technologies. Krasnoyarsk, 2017, p.204. ISBN: 978-5-7638-3661-5
- 2017 — The VLSI high-level synthesis for building onboard spacecraft control systems. Nepomnyashchiy O.V., Ryjenko I.V., Shaydurov V.V., Sirotinina N.Y., Postnikov A.I. Proceedings of the Scientific-Practical Conference "Research and Development - 2016" Springer International Publishing AG Cham, Switzerland 2017 p.737.
- 2016 — Selecting Informative Variables in the Identification Problem MIHEEV E.V., NEPOMNYASHCHIY O.V. Journal of Siberian Federal University - Mathematics and Physics № 3, Krasnoyarsk, Russia, 2016,9(4) pp. 478-485. DOI: 10.17516/1997-1397-2016-9-4-478-485.

- 2016 — Mathematical Modeling of H-processes Medvedev A.V., Miheev E.V., Nepomnyashchiy O.V.) Journal of Siberian Federal University - Mathematics and Physics № 9(3), Krasnoyarsk, Russia, 2016., pp. 338-346. DOI: 10.17516/1997-1397-2016-9-3-338-346
- 2016 — Methods and algorithms for a high-level synthesis of the very-large-scale integration O. Nepomnuashchiy, A. Legalov, V. Tyapkin, I. Ryzenko, V.Shaydurov. WSEAS Transactions on Computers, Volume 15, 2016, Art. #22, pp. 239-247.
- 2015 — Oleg Nepomnyashcy, The LIDAR Technology and Earth Remote Sensing for Small Space Vehicles. / Oleg Nepomnyashcy, Evgeny Veicov, Vladimir Kopilov, Vitalii Khabarov, Dmitry Popov. // 2015 International Siberian Conference on Control and Communications (SIBCON), 2015, pp. 306–311. PROCEEDINGS 978-1-4799-7103-9/15/$31.00 ©2015 IEEE

Projects

- 2018–2020 — Simulator of space craft system development. JSC ACADEMICIAN M.F. RESHETNEV. Information Satellite Systems.
- 2017–2020 — Development and debugging of hardware-software simulator for space craft system. JSC ACADEMICIAN M.F. RESHETNEV. Information Satellite Systems.
- 2016–2017 — Creation of high-tech production of modern goniometric satellite navigation equipment based on System on a Chip. Decree of the Government of the Russian Federation №218.
- 2013–2014 — Development of a complex of mobile automated special tests of electronic equipment. JSC ACADEMICIAN M.F. RESHETNEV. Information Satellite Systems.
- 2007–2011 — Development of circuitry solutions and carrying out mock-experimental work on the creation of energy-converting equipment for advanced spacecraft. JSC ACADEMICIAN M.F. RESHETNEV. Information Satellite Systems.
- 2009 — Development of methods and instruments for the determination of hydrocarbons in the atmosphere for the purpose of exploration of hydrocarbon deposits in the Krasnoyarsk Territory. JSC Siberian Geophysics.
- 2003 — Microprocessor systems design complex. FTP Electronics Research.

Conferences

- 2019 — 2019 International Siberian Conference on Control and Communications (SIBCON) Russia, Tomsk.
- 2018 — Workshop in Sorbonne Université. Sorbonne Université, France, Paris, 9th – 13th July 2018.
- 2018 — Scientific Methodological Conference. Latvia, Riga, 6-7 September 2018.
- 2018 — Training in Melechen. Thomas More University of Applied Sciences. Belgium. From 21 till 26 January 2018.
- 2017 — Business Dialog Satellite Internet. Siberia. Implementation of master's programs. Russia, Krasnoyarsk, August 24, 2017
- 2017 — Applied curricula in space exploration and intelligent robotic systems. Technische Universität Berlin, Germany. Okt, 2017

Patents

- Nepomnyashchy O.V. Device for training and refereeing boxers / Tolstikov V.A., Zlobin V.S. // patent for utility model. State number Registration 99332 dated November 20, 2010 - Moscow: FGU FIPS, 2010.
- Nepomnyashchy O.V. A method for controlling a pulse voltage stabilizer / Krasnobaev Yu.V., Nepomnyashchiy OV, Khabarov V.A., Kapulin D.V., Goncharuk D.V. // Patent for invention. State number Registration 2460114 from 08.27.2012 - M .: FGU FIPS, 2012.
- Nepomnyashchy O.V. A method for controlling a pulse voltage regulator / Yu.V. Krasnobaev, O.V. Nepomniachtchi et al. // Reg. Certificate No. 019047 dated 12/30/2013 -: Eurasian Patent Organization EPO, 2013.
- Nepomnyashchy O.V. A method of controlling a pulse voltage stabilizer / Nepomnyashchy O.V., Dontsov O.A., Ruler A.S., Krasnobaev Yu.V. // Patent for the invention. State number Registration No. 2621071 dated 05/31/2017 - M .: FGU FIPS, 2017.
- Nepomnyashchy O.V. Program for automated control of thermal loads of high-temperature production processes / V.A. Khabarov, O.V. Nepomnyashchy, G.A. Skotnikov, S.F. Ten // State University. Registration No. 2009617139 dated December 25, 2009 - Moscow: FGU FIPS, 2009.
- Nepomnyashchy O.V. Photon-10-08 / V.A. Khabarov, O.V. Nepomnyashchy, G.A. Skotnikov, Yu.S. Grigoryev // State University. Registration No. 2010617534 dated 10/15/2010 - M .: FGU FIPS, 2010.
- Nepomnyashchy O.V. Compiler of the procedural and parametric programming language Alien / V.A. Khabarov, O.V. Nepomnyashchy, G.A. Skotnikov, S.F. Ten // Number of state. Registration 2010617534 dated 10/15/2010 - M .: FGU FIPS, 2010.
- Nepomnyashchy O.V. “Microprocessor systems. Electronic training complex for the discipline. Version 1.0 "/ O.V. Nepomnyashchy, E.A. Veysov and others // State University. Registration No. 14841 dated January 18, 2010 - M .: Federal State Unitary Enterprise STC Informregister, 2010.
- Nepomnyashchy O.V. “Microprocessor systems. Presentation materials: Visual Aid. Version 1.0 "/ O.V. Nepomniachtchi // Number of state. Registration No. 14842 dated January 18, 2010 - Moscow: Federal State Unitary Enterprise STC Informregister, 2010.
- Nepomnyashchy O.V. “Microprocessor systems. Test task bank: Test and measurement materials. Version 1.0 "/ O.V. Nepomnyashchy, E.A. Veysov et al. // Number of state. Registration No. 14843 dated January 18, 2010 - Moscow: Federal State Unitary Enterprise STC Informregister, 2010.
- Nepomnyashchy O.V. Program for automated control of a laser installation of remote sensing / V.A. Khabarov, O.V. Nepomnyashchy, S.N. Titovsky, S.F. Ten // State Registration No. 2011612470 dated February 1, 2011 - M .: FGU FIPS, 2011.
- Nepomnyashchy O.V., Translator with a functional-stream parallel programming language. / Legalov A.I., Redkin A.V., Matkovsky I.V. // Certificate of state registration of computer programs No. 2011615829. Registered in the program register on July 27, 2011.
- Legalov A.I., Nepomnyashchy O.V., Redkin A.V., Matkovsky I.V. Generator of a control graph of functional-stream parallel programs. / // State-owned. Registration of computer programs No. 2011615830 dated June 27, 2011 - M .: FGU FIPS, 2011.

- The program of microelectronic control of a pulsed voltage regulator Nepomnyashchy, A.I. Legalov, S.N. Titovsky, V.A. Khabarov Russia // State University. Registration of computer programs No. 2011615831 dated May 31, 2011 - M .: FGU FIPS, 2011.
- Legalov A.I., Nepomnyashchy O.V., Redkin A.V., Matkovsky I.V., Khabarov V.A. Interpreter of functional streaming parallel programs. // The state. Registration No. 2011615832 dated 06/27/2011 - M .: FGU FIPS, 2011.
- Nepomnyashchy O.V. Graphic debugger of functional-stream parallel programs in Pythagoras language on Linux OS / O.V. Nepomnyashchy, V.A. Khabarov, Yu.V. Udalova, A.I. Legalov // State University. Registration No. 2012612190 dated January 20, 2012 - M .: FGU FIPS, 2012.
- Nepomnyashchy O.V. The module for generating a graphical representation of a reverse information graph / O.V. Nepomnyashchy, I.V. Matkovsky, V.S. Vasiliev, A.I. Legalov // State University. Registration No. 2013611617 of January 29, 2013 - M .: FGU FIPS, 2013.
- Nepomnyashchy O.V. Module for the formation of a reverse information graph / O.V. Nepomnyashchy, I.V. Matkovsky, M.Yu. Sirotinina, A.I. Legalov // State University. Registration No. 2013611618 dated January 29, 2013 - M .: FGU FIPS, 2013.
- Nepomnyashchy O.V. Distributed Visualization Management System for the Render Farm Cloud Service Based on a Supercomputer / O.V. Nepomnyashchy, K.A. Kuzmin, A.I. Panasyuk, S.V. Mokolov, V.A. Khabarov // State University. Registration No. 2013613033 dated 03/21/2013 - M .: FGU FIPS, 2013.
- Nepomnyashchy O.V. The program of a single-chip engine driver with electromagnetic reduction / O.V. Nepomnyashchy, V.I. Ivanov, V.V. Vasiliev, S.N. Titovsky, V.A. Khabarov // State University. Registration No. 2013613055 dated 03/21/2013 - M .: FGU FIPS, 2013.
- Nepomnyashchy O.V. Program for digital filtering of the acoustic feedback signal / O.V. Nepomnyashchy, K.V. Kondratiev, V.N. Sergeevich, V.A. Khabarov // State University. Registration No. 2013614146 of 04.24.2013 - M .: FGU FIPS, 2013.
- epomnyashchy O.V. The syntactic analyzer of the text representation of a reverse information graph / O.V. Nepomnyashchy, I.V. Matkovsky, M.S. Kropacheva, A.I. Legalov // State University. Registration No. 2013611434 dated January 9, 2013 - M .: FGU FIPS, 2013.
- Nepomnyashchy O.V. The program for synthesizing the description of circuits in the description languages of the HDL equipment from the functional-parallel programming language "Pythagoras" / A.A. Komarov, I.N. Ryzhenko, O.V. // The state. registration of computer programs No. 2015619175 of 08/26/2015 - M .: FGU FIPS, 2015.
- Nepomnyashchy O.V. Complex functional block of pseudo-random sequence generators / O.V. Nepomniachtchi, D.D. Dmitriev, P.A. Avlasko, I.N. Ryzhenko // State University. Registration of computer programs No. 2016662259 dated December 20, 2016 - M .: FGU FIPS, 2016.
- Nepomnyashchy O.V. Complex functional block of generators of interfaces of a computing node / O.V. Nepomniachtchi, D.D. Dmitriev, P.A. Avlasko, I.N. Ryzhenko // State University. registration of computer programs No. 2016619836 from 09/20/2016 - M.: FGU FIPS, 2016.
- Nepomnyashchy O.V. The complex functional block of the lowering adder-limiter / O.V. Nepomniachtchi, A.V. Leonova, P.A. Avlasko, I.N. Ryzhenko, A.B. Gladyshev // State University. registration of computer programs No. 2016619714 of 09/20/2016 - M .: FGU FIPS, 2016.
- Nepomnyashchy O.V. Complex functional block of discrete sequential Fourier transform / O.V. Nepomnyashchy, A.A. Komarov, A.V. Leonova, P.V. Avlasko, A.B. Gladyshev // State University. Registration No. 2016662259 dated December 20, 2016 - M .: FGU FIPS, 2016.
- Nepomnyashchy O.V. Program of a system on a chip for controlling a pulse voltage regulator / O.V. Nepomniachtchi, A.P. Yablonsky, Yu.V. Krasnobaev, R.A. Latyshev // State University. registration of computer programs No. 2018612339 dated January 15, 2018 - M .: FGU FIPS, 2018.
- Nepomnyashchy O.V. Program for processing data of agro-industrial complex conveyor protection / O.V. Nepomniachtchi, R.A. Latyshev, A.P. Yablonsky, A.G. Khantimirov // State University. registration of computer programs No. 2018612340 of February 15, 2018 - M .: FGU FIPS, 2018.
- Nepomnyashchy O.V. Management program for an automated energy distribution system / A.G. Kiryanova, V.G. Seredkin, A.I. Postnikov // State University. registration of computer programs No. 2018612462 of February 16, 2018 - M .: FGU FIPS, 2018.
- Nepomnyashchy O.V. Specialized software for managing a group of brushless DC motors in electric transport / O.V. Nepomnyashchy, A.V. Tarasov // State University. registration of computer programs No. 2018612518 of February 19, 2018 - M .: FGU FIPS, 2018.
- Nepomnyashchy O.V. The program of self-adaptive control of the embedded system of technical vision / O.V. Nepomnyashchy, N.A. Latvian, M.A. Wyman, M.A. Mambetaliev // State University. registration of computer programs No. 2018612519 of February 19, 2018 - M .: FGU FIPS, 2018.
- Nepomnyashchy O.V. Architecture-independent, parallel single-chip video capture module / O.V. Nepomnyashchy, A.G. Khantimirov, V.V. Goreva, E.S. Byvshev // State University. registration of computer programs No. 2018660596 from 08.28.2018 - M .: FGU FIPS, 2018.
- Nepomnyashchy O.V. Program for the interpretation of functional-stream parallel programming language / I.V. Matkovsky, A.I. Legalov, V.S. Vasiliev, O.V. Nepomniachtchi // State University. registration of computer programs No. 2018666239 of December 13, 2018 - M .: FGU FIPS, 2018.
- Nepomnyashchy O.V. The program for the formation of the control graph for the functional-stream language of parallel programming / I.V. Matkovsky, A.I. Legalov, V.S. Vasiliev, O.V. Nepomniachtchi // State University. registration of computer programs No. 2018666240 of December 13, 2018 - M .: FGU FIPS, 2018.
- Nepomnyashchy O.V. Program for optimizing the functional-stream parallel programming language / I.V. Matkovsky, A.I. Legalov, V.S. Vasiliev, O.V. Nepomniachtchi // State University. registration of computer programs No. 2018666434 dated 12/17/2018 - M .: FGU FIPS, 2018.

- Nepomnyashchy O.V. Architecture-independent lidar sensing management program/ O.V.Nepomnyashchiy, S.L. Leshenko, D.V.Popov, D.O. Nepomnyashchy // State University. registration of computer programs No. 2019614255 dated 05/19/2019 - M .: FGU FIPS, 2019.

Grants

- 2018–2019 — Architecturally independent development of parallel programs based on the flow-functional paradigm. Russian Foundation for Basic Research.
- 2016–2019 — Erasmus+ Project «Applied curricula in space exploration and intelligent robotic systems. European Education, Audiovisual and Culture Executive Agency.
- 2014–2016 — Development of methods and means of increasing the autonomy of the functioning of low-orbit and geostationary spacecraft based on the use of high-precision navigation measurements by multichannel receivers of global navigation satellite systems. FTP “Research and development on priority directions of development of scientific and technological complex of Russia for 2014-2020”.
- 2014–2016 — Development a multifunctional on-board control complex for small spacecraft based on radiation-resistant "system on a chip". FTP “Research and development on priority directions of development of scientific and technological complex of Russia for 2014-2020”.
- 2015–2017 — Development of VLSI System on a chip for navigation receiver. FTP “Research and development on priority directions of development of scientific and technological complex of Russia for 2014-2020”.
- 2014 — Component analysis of seasonal and daily dynamics of growth and changes in the water regime of trees based on complex data of high-precision environmental monitoring systems. Russian Foundation for Basic Research.
- 2013 — Development of modeling methods for creating control and monitoring systems for the executive precision automation of communication, navigation and geodesy spacecraft. FTP “Research and development on priority directions of development of scientific and technological complex of Russia for 2014-2020”.
- 2012–2013 — Instrumental support for architecture-independent development of parallel programs based on the functional-stream parallel programming paradigm. FTP “Research and development on priority directions of development of scientific and technological complex of Russia for 2014-2020”.
- 2012–2013 — Development of methods and microelectronic control systems for executive precision automation of spacecraft with an increased active life. FTP “Research and development on priority directions of development of scientific and technological complex of Russia for 2014-2020”.
- 2012–2013 — Analysis of the fundamental mechanisms of coordination of growth processes of primary and secondary meristems in the morphogenesis of woody plants. Russian Foundation for Basic Research.
- 2010–2012 — Development of the element base of microelectronics, methods and means of microelectronic control for energy converting equipment of promising spacecraft. Russian Foundation for Basic Research.

Honors and awards

- 1995, 1996 Certificates of honor of the Ministry of Defense of the Russian Federation for the performance of military duty in the ranks of the armed forces of the USSR.
- 2002-2006 KPI Anniversary Honors
- 2008 State Prize of the Krasnoyarsk Territory in the field of vocational education
- 2011 Prize of the Union of Rectors of the city of Krasnoyarsk for outstanding achievements in scientific and artistic creativity.
- 2017 1-Gold, 1-Silver, 2-Bronze medals in the nominations “Information Technologies in Education”, “Measuring Instruments, Information-Measuring Systems and Complexes”, “Automation and Informatization of Production, Processes and Scientific Research”, “Elements , devices and software for measurement, control, informatization. "
- 2017-2018 Anniversary certificates of honor of the Siberian Federal University
- 2018 Certificate of honor of the head of the administration of the October district of Krasnoyarsk.

Memberships

- 2017 Expert of the expert council, Federal State Budgetary Institution “Directorate of NTP”
- 2016 Member of the Editorial Board of the ICSN “Science and Education”
- 2015 Member of the Advisory Board adm. Krasnoyarsk Territory to deploy the GLONASS system.
- 2013 Expert, Expert Council, TP “National Satellite Information System”
- 2012 Member ed. Board of the journal "Research of Science City"
- 2008 Member of UMO SFU

Upskilling

- 2020 — Siberian Federal University, Krasnoyarsk, Russia. English in the university environment (B2).
- 2019 — Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus. Scientific Methodological.
- 2019 — Siberian Federal University, Krasnoyarsk, Russia. English in the university environment (B1).
- 2018 — Sorbone Universite, Paris, France. Applied curricula in space exploration and intelligent robotic systems.
- 2018 — Riga Technical University, Riga, Latvia. Space engineering, technologies and exploration.
- 2018 — Siberian Federal University, Krasnoyarsk, Russia. Implementation of educational programs using e-learning and distance learning technologies.
- 2018 — Siberian Federal University, Krasnoyarsk, Russia. English in the university environment (A2).

- 2018 — Siberian Federal University, Krasnoyarsk, Russia. Fundamentals of the pedagogical design of modern e-learning tools in higher education
- 2018 — Siberian Federal University, Krasnoyarsk, Russia. Usability and ergonomics of modern online courses.
- 2018 — Siberian Federal University, Krasnoyarsk, Russia. Development of electronic courses in the LMS Moodle system
- 2018 — North-West Interuniversity Regional Educational and Scientific Center “Synergy”: St. Petersburg, Russia. Intelligent control systems.
- 2018 — Luleå University of Technology. Lulea, Sweden. Artificial Intelligence and Computer Technologies in Space Applications.
- 2017 — Technische Universität Berlin, Berlin, Germany. Applied curricula in space exploration and intelligent robotic systems.
- 2017 — University of Applied Sciences. Thomas Moore, Sint-Katelzhina Waver, Belgium. Applied educational program in the field of space research and intellectual robotics.
- 2017 — LLC Center Pronto, Krasnoyarsk, Russia. Spoken English.
- 2016 — Tomsk Polytechnic University, Tomsk, Russia. The practice of applying the CDIO concept in engineering education.
- 2016 — Tomsk Polytechnic University, Tomsk, Russia. Application of the CDIO concept in engineering education.
- 2015 — Luleå University of Technology, Luleå, Sweden. Theory and practice in modern methods and approaches for development, testing and deployment of hardware and software for dependable embedded.
- 2015 — Siberian Federal University, Krasnoyarsk, Russia. English for university teachers of non-linguistic specialties.
- 2014 — Siberian Federal University, Krasnoyarsk, Russia. VLSI Design in Pyxis and Questa ADMS Mentor Graphics GDC Europe.