



Viacheslav Pshikhopov

Doctor of Science,

Professor,

**Director of Research and Development
Institute of Robotics and Control Systems
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**Head of the Robotics and Intelligent
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Date of Birth: 23th January 1963

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1. Education

University	Degree	Year	Specialization
Taganrog State University of Radioengineering (Russia, Rostov region, Taganrog)	Engineer	1986	Automation and telemechanics
Rostov-on-Don State University (Russia, Rostov-on-Don)	Candidate of science	1997	Control of technical systems
Rostov-on-Don State University (Russia, Rostov-on-Don)	Doctor of science	2009	System analysis, control and data processing

2. Professional qualification

<i>Job Title</i>	<i>Years</i>	<i>Place of the work</i>
Engineer	1986	Taganrog State University of Radio Engineering (Russia, Rostov region, Taganrog)
Senior engineer	1987	
Junior researcher	1991	
Post-graduate study	1991-1994	
Research assistant	1995	
Senior researcher	1998	
Assistant professor	1998	
Post-doctoral study	2002-2004	
Founder and leader youth design agency "Robotics and intellectual systems"	2002	

Head of the Department of Electrical Engineering and Mechatronics	2004-2014	Taganrog State University of Radio Engineering (Russia, Rostov region, Taganrog) Southern Federal University (Russia, Rostov region, Taganrog)
Director of Coordinating Research and Development Center for Control Systems	2007	Southern Federal University (Russia, Rostov region, Taganrog)
Director of Research Institute of Robotics and Control Systems	2014	
Director of Engineering-Technological Academy	2015	

3. Educational work

Academics Courses:

1. Introduction to Robotics.
2. Control Theory Fundamentals.

Scientific advisor of bachelor and master students

4. Projects

Since 1986 up to 1998 was a leading researcher and engineer in more than 20 completed projects.

Since 1998:

№	Project title	Time terms	Organization, financing project	Role
1.	Participation grant for International conference "Mathematical theory of the networks and systems", Italy, Padova	1998	Russian Foundation for Basic Researches (RFBR)	Leading researcher and engineer
2.	Sinergetic Methods of the Syntheses and Neurocomputer Realization of Planning Systems and Intelligent Robots Control. Grant RFBR 99-0100071	1999 2001	RFBR	Leading researcher and engineer
3.	Development of the Fundamentals and Neurocomputer Design Methods for the Synergetic Multicriterial Industrial Robots Control Systems Project 03.01.01 program of Russian Federation (RF) Ministry formation	1999 2000	RF ministry of the education	Leading researcher and engineer

	"Scientific studies of the high school in the field of production technology"			
4.	Development of the Fundamentals and Neurocomputer Design Methods for the Synergetic Multicriterion Industrial Robots Control Systems. Project 03.01.014 program Ministry formation RF "Scientific studies of the high school on priority to directions of the science and technology"	2001 2002	RF ministry of the education	Leading researcher and engineer
5.	Intelligent Mobile Robots Based on Mini-Airships Research and Synthesis Methods Development. Project 03.01.062 research program "Scientific studies of the high school on priority directions of the science and technology"	2003 - 2004	RF Ministry of the education	Leading researcher and engineer
6	Analytical Synthesis Methods and Neurocomputer Realization of the Control Performance Optimal Dynamical Systems Along Set Trajectories. Project E02-2.0-73 contests 2002 on competition grants RF Ministry of the education on fundamental studies in the field of natural and exact sciences	2003 2004	RF Ministry of the education	Leading researcher and engineer
7.	Structure-Algorithmic Motion Control System Realization for the Intelligent Mobile Robots Operating in Extreme Environments. Grant A03-3.16-87 contests 2003 on undertaking young scientist scientific studies in leading scientifically-pedagogical group of the high educational institutions and scientific organizations of the RF Ministry of the education. (executer - a post-graduate student Korneev I.G.)	2003 2004	RF Ministry of the education	Leading researcher and engineer
8.	Project 12148 "Development, Production, Mounting and Adjustment of the Automated Street Illumination Control System in Taganrog"	1997 2000	Administration of Taganrog	Leading researcher and engineer
9.	Project 12102 "Development, Production, Mounting and Adjustment of the Automated Street Illumination Control System in Rostov-on-Don"	2002 2003	Administration of city of Rostov-on-Don city	Leading researcher and engineer
10.	Project 14800 "Development,	2004	Administration	Leading

	Production, Mounting and Adjustment of the Automated Street Illumination Control System in Chelyabinsk"		of city of Chelyabinsk	researcher and engineer
11.	Development of an integrated set of navigation and motion control for autonomous unmanned underwater vehicles	2010	Russian Ministry of the Education	Scientific Leader
12.	Development of analytical method for synthesis of optimal interrelated nonlinear control systems	2010-2012	Russian Foundation for Basic Researches	Scientific Leader
13.	Development of the fundamentals of construction and researching of systems for mobile units operating in a priori nonformalized environments with unstable regimes	2010-2012	Russian Foundation for Basic Researches	Scientific Leader
14.	Project "Development of control and telecommunication system for unmanned airship"	2011-2013	Hunan Space Agency, China	Scientific Leader
15.	Project "MAAT - Multibody advanced airship for transport", FP7 Grant №285602	2011-2015	European Commission	Scientific Leader
16.	Project 14-19-01533, Development of theory and methods for intelligent position-trajectory control systems for mobile robots in conditions of uncertainty	2014-2016	Russian Scientific Foundation	Scientific Leader

5. Publications:

Total: 174,

In last 5 years: 61

The most important:

Patents:

1. Pshikhopov V.Kh., *Path Following Controller for Manipulating Robot*, Russian Federation patent № 2146606, bulletin № 8, 2000.
2. Pshikhopov V.Kh., *Mobile Robot Position-trajectory Controller*, Russian Federation patent № 2185279, bulletin № 20, 2002.
3. Pshikhopov V.Kh., *Performance Optimal Manipulating Robot Trajectory Controller*, Russian Federation patent № 2199775
4. Chernukhin Yu.V., Pshikhopov V.Kh., Pisarenko S.N., Trubachev O.E., *Adaptive Mobile Robot Controller*, Russian Federation patent № 2187832, bulletin №23, 2002
5. Pshikhopov V.Kh. *Trajectory optimal control of manipulator robot*, Russian Federation patent № 2199775, 2003
6. Pshikhopov V.Kh., Dorukh I.G. *Controller of mobile object*, Russian Federation patent № 88169, bulletin № 30, 2009.

7. Pshikhopov V.Kh. Method of controlling a moving object and device for its implementation// utility patent RUS 2450308 24.02.2010
8. Pshikhopov V.Kh, Medvedev M.Yu. M.Yu., Dorukh I.G. Krukhmalev V.A. Fedorenko R.V. The device for airship control// patent, utility models, № 137812, 05.02.2014
9. Pshikhopov V.Kh, Kulchenko A.E. Software package for construction, research and application of robotic control helicopter// Certificate program computers, № 2013612587, 06.03.2013
10. Pshikhopov V.Kh., Medvedev M.Yu., Gurenko B.V. Software-modeling complex of autonomous marine mobile objects// Certificate program computers, № 2013660212, 28.10.2013 12.
11. Pshikhopov V.Kh., Gurenko B.V. Nazarkin A.S. Software of onboard control system of autonomous robotic systems based on the freeboard mini-ship// Certificate program computers, № 2013660412, 05.11.2013

Monographs:

1. Beloglazov D.A., Guzik V.P., Kosenko E.Y., Krukhmalev V.A., Medvedev M.Y., et al. Intelligent planning of trajectories of vehicles in environments with obstacles/ Ed. by Pshikhopov V.Kh., Moscow, FIZMATLIT, 2014 – 300 p.
2. Beloglazov D.A., Gaiduk A.R., Kosenko E.Y., Medvedev M.Y., Pshikhopov V.Kh., et al. Group control of vehicles in uncertain environments / Ed. by Pshikhopov V.Kh., Moscow, FIZMATLIT, 2015 – 305 p.

Recent papers cited by Scopus:

1. Pshikhopov V.Kh, Medvedev M.Yu. Control of mobile objects in definite and unknown environments. M: Science, 2011. 350 p. ISBN 978-5-02-037509-3.
2. Pshihopov V.Kh, Medvedev M.Yu., Haiduk A.R., Neudorf R.A., Belyaev V., Fedorenko R.V. Kostjukov V.A., Krukhmalev V.A. System of position-trajectory control robotic aeronautic platform: control algorithms. - Mechatronics, Automation and Control, 2013, № 7. Pp. 13 - 20.
3. Pshihopov V.Kh, Medvedev M.Yu. and others. Control of aeronautic complexes: theory and design technology. Fizmatlit, Moscow, 2010. 400 p.
4. Shanin D.A., Pshihopov V.Kh, Medvedev M.Yu. Neural network adaptive controller for the control problem of helicopter model through a global feedback // Proceedings of the SFedU. Engineering. Number 11. 2008. Pp. 107 - 110.
5. Pshikhopov, V.K., Medvedev, M.Y., Gurenko, "Homing and docking autopilot design for autonomous underwater vehicle", 2014, Applied Mechanics and Materials
6. Pshikhopov, V.Kh., Medvedev, M.Yu., Gaiduk, A.R., Gurenko, B.V., Control system design for autonomous underwater vehicle, 2013, Proceedings - 2013 IEEE Latin American Robotics Symposium, LARS 2013, doi:10.1109/LARS.2013.61
7. Pshikhopov, V., Sergeev, N., Medvedev, M., Kulchenko, A., The design of helicopter autopilot, 2012, SAE Technical Papers
8. Pshikhopov, V., Medvedev, M., Kostjukov, V., Fedorenko, R., Gurenko, B., Krukhmalev, V. "Airship Autopilot Design," SAE Technical Paper 2011-01-2736, 2011, doi:10.4271/2011-01-2736
9. Pshikhopov, V.Kh., Krukhmalev, V.A., Medvedev, M.Yu., Budko, A.Yu., Chufistov, V.M., Adaptive control system design for robotic aircrafts, 2013 IEEE Latin American Robotics Symposium, LARS 2013, doi:10.1109/LARS.2013.59
10. Pshikhopov, V.Kh., Medvedev, M.Yu., Block design of robust control systems by direct

Lyapunov method, 2011, IFAC Proceedings Volumes (IFAC-PapersOnline), doi: 10.3182/20110828-6-IT-1002.00006

11. Pshikhopov, V.Kh., Ali, A.S., Hybrid motion control of a mobile robot in dynamic environments, 2011, IEEE International Conference on Mechatronics, ICM 2011 - Proceedings
12. Pshikhopov, V.Kh., Medvedev, M.Yu, Robust control of nonlinear dynamic systems, 2010, IEEE ANDESCON Conference Proceedings, ANDESCON 2010

6. Conferences and exhibitions participation

Participated

1. 4-th Conf. of European Center for Peace and Development on Advances Robotics, Intelligent Automation and Active Systems. August 24-26, 1998, Moscow, Russia
2. International Conference "Mathematical Theory of Network and Systems", July 6-10, 1998, Padova, Italy
3. International Conference on Systems, Automation Control and Measurement. Nis, Jugoslavia, 1998
4. International Conference "Intelligent Multiply-processor Systems", Taganrog, 1999
5. All-Russia scientific and technical conf. "New Information Technology in Radioelectronics", Riazan, 1999
6. International Conference "Conversion, instrument-making, medical technic". Vladimir, 1999
7. International Conference "Mathematical Theory of Network and Systems", Perpignian, France, June 19-23, 2000
8. Second International Workshop on Microfactories, Fribourg, Switzerland, October 9 - 10, 2000
9. International Conference "Automatic control and industrial processes automation", Minsk, BGTU, 2000
10. "Extreme Robotics". St.-Petersburg, 2001
11. International Conference "System Identification and Control Problems - SICPRO- 2000", Moscow, 26-28 of September 2000
12. 1st. International Conference on Mechatronics and Robotics St-Petersburg, 29 May - 2 June 2000
13. VII International SAUM Conference on Systems, Automatic Control and Measurements. Vrnjachka Banja, Jugoslavia, September 26-28, 2001
14. International Conference "Intelligent Multiply-Processor Systems", Gelendjik, 2001
15. Conference "Evolvable Intelligent Systems of Computer-Aided Design and Control", Novocherkassk, 2001
16. 4th All-Russian Conf. "New Information Technologies. Development and Application Aspects". Taganrog, 2001
17. International Conference "Evolvable Intelligent Systems of Computer-aided Design and Control". Novocherkassk, 2002
18. International Conference "Supercomputers and Multiply-Processor Systems", Taganrog, 26-30 June, 2002
19. International Conference "System Identification and Control Problems", Moscow, January, 2003
20. "Technical Cybernetics, Radioelectronics and Control Systems", TSURE, Taganrog, 2002
21. "Evolvable Intelligent Computer-aid Design and Control Systems" SRSTU, Novocherkassk, 2002

22. International scientific and technical conference “Supercomputers and Multiple- Processor Computational Systems”, 26-30 June 2002, Taganrog
23. 12th scientific and technical conference “Extreme Robotics”. St.-Petersburg, April, 2002
24. All-Russia scientific and technical youth festival “Mobile Robots - 2002”, Moscow, MTU, November 27 - December 7, 2002
25. “System Identification and Control Problems”, Moscow, January, 2003
26. “Natural, Social and Technical Processes Dynamics”, TSURE, Taganrog, 2003
27. “Analysis and modeling of the evolvable intelligent systems” SRSTU, Novocherkassk, 2003
28. 13 th scientific and technical conference “Extreme Robotics”. St.-Petersburg, April, 2003
29. 3 international scientific and practical conference “Information Technologies Application in Exploitable Buildings and Constructions Inspection”, Novocherkassk, 2003
30. 4th international scientific and technical conference “Intelligent and Multiple- Processor Systems - IMS’2003”, Divnomorskoe, September, 2003
31. All-Russia scientific and technical youth festival “Mobile Robots - 2003”, Moscow, MTU, November 15 - November 23, 2003
32. 1st All-Russia conference “Mechatronics, Automation, Control”, Vladimir, June, 2004
33. Seminar “Robotics and Mechatronics”, AEC, Moscow, 2004
34. International Seminar “Adaptive Robots - 2004”, St.-Petersburg, June, 2004
35. 1st specialized exhibition “Robotics”. Moscow, February, 2004. All-Russia Exhibition Center. Exhibit - Autonomous mobile robot “Sterh”, based on miniairship
36. IV International innovations and investment salon. Moscow, AEC, February, 2004
37. VII International industrial property salon “Archimedes”, March, Moscow, 2004
38. Specialized exhibition “Water, ecology, technology”, Rostov-on-Don, “Vertolexpo”, March, 2004
39. VIII Triennial International SAUM Conference on Systems, Automatic Control and Measurements, Faculty of Mechanical Engineering University of Belgrade, November, 2004
40. 2nd special-purpose exhibition “Adaptive and Intelligent Robots”, All-Russia Exhibition Center, Moscow, 2005
41. 2010 IEEE ANDESCON Conference, 14 September 2010 - 17 September 2010, Bogota, Colombia;
42. 10th IEEE Latin American Robotics Symposium, LARS 2013, 21 October 2013 - 24 October 2013, Arequipa, Peru.
43. SAE AeroTech Congress and Exhibition, AEROTECH 2013; 24 - 26 September 2013; Montreal, QC; Canada;

Organized

1. 1st international conference of students and aspirants “Robotics, Mechatronics and Intelligent Systems”, TSURE, Taganrog, 2005
2. All-Russian scientific and practical conference “Perspective control systems and tasks”, Dombay, Russia, March, 2006
3. All-Russian scientific and practical conference “Perspective control systems and tasks”, Dombay, Russia, April, 2007
4. All-Russian scientific and practical conference “Perspective control systems and tasks”, Dombay, Russia, March, 2008
5. All-Russian scientific and practical conference “Perspective control systems and tasks”, Taganrog, Russia, March, 2009

6. All-Russian scientific and practical conference “Perspective control systems and tasks”⁸, Dombay, Russia, April, 2010
7. All-Russian scientific and practical conference “Perspective control systems and tasks”, Dombay, Russia, April, 2011
8. All-Russian scientific and practical conference “Perspective control systems and tasks”, Dombay, Russia, April, 2012
9. All-Russian scientific and practical conference “Perspective control systems and tasks”, Dombay, Russia, April, 2013
10. All-Russian scientific and practical conference “Perspective control systems and tasks”, Sochi, Russia, April, 2014

7. Public acknowledgment

1. Russian Federation Education Ministry award for the students scientific leader Pshikhopov V.Kh. 2002.
2. Organization committee award for the participation in All-Russia scientific and technical youth festival “Mobile robots - 2002”, Moscow, 2002
3. Special audience prize for the autonomous mobile robot “Skif” on All-Russia scientific and technical youth festival “Mobile robots - 2002”, Moscow, 2002
4. Gratifying letter form the administration of Taganrog to Pshikhopov V.Kh. for the advances in students science development. 2003.
5. North-Caucasian Scientific High School Center and Russian Engineering Academy Award for Pshikhopov V.Kh. for the students research works guidance. Rostov-on- Don. 2003.
6. Rostov region trade unions federation council, regional inventors and rationalists society council awarded a honorary title “Best Inventor of the Don”.
7. Laureate medal and 1st degree diploma of the All-Russia exhibition of research efforts and innovation activities of students, aspirants and young scientists in Russian Federation. Novocherkassk, 2003
8. Diploma and medal “AEC Laureate” for the development of the autonomous mobile robot “Sterh”, based on mini-airship.
9. 1st specialized exhibition “Robotics” award for active participation and successful appearance in “Robotics and mechatronics” seminar, Moscow, 2004
10. Participating award and prize “For the Contribution to the Environment Saving” of the specialized exhibition “Water, ecology, technology”, Rostov-on-Don, “Vertolexpo”, 2004
11. IV International Innovations and Investments Salon award for development of the automated street illumination system. Moscow, AEC, 2004
12. “Rospatent” award for the manipulator controller for high performance robotic complexes development. In the context of the VII International industrial property salon “Archimedes”, Moscow, 2004
13. VII International industrial property salon “Archimedes” organization committee award for the active participation in salon. Moscow, 2004
14. “High technologies of XXI century” exhibition award for the participation and innovation activities, Moscow, 2004
15. “High technologies of XXI century” exhibition award for the development of the resource-saving project “Automated street illumination control system”, Moscow, 2004
16. All-Russia students scientific and technical creative works exhibition award for participation.
17. Breastplate of the Education and Science ministry “For the youth science development”,

2004

18. “Cartography” contest winner diploma for robot “Skif” on the youth festival “Mobile robots 2005”, Mantes-la-Jolie, France
19. Diploma and medal for the active participation in the special-purpose exhibition “Adaptive and intelligent robots”. All-Russian Exhibition Center, Moscow, 2005.
20. Diploma for development of control algorithm for robotized airship, Moscow, Ministry of Education and Science, 2006.
21. Diploma for the best scientific work of 2011, Southern Federal University, Rostov- on-Don, Russia, 2012
22. Diploma for 1-st place in competition of Indoor Unmanned Airships, ERBA 2013, Moscow, Ramenskoe, 2013
23. Diploma of Leading Scientific School, Russian Federation President Council, 2014

8. International official visits

1. University of Padova, Italy, 1998
2. University of Belgrade, Serbiya and Montenegro, 2004.
3. Institute Mihaylo Pupin, Belgrade, Serbiya and Montenegro, 2004
4. University of Versailles, France, 2005
5. University of Auckland, New Zealand, 2008
6. Durban University of Technology, Republic of South Africa, 2012

9. Membership in Scientific and Engineering Societies:

1. IEEE since 2002.
2. Editorial board of journal “FACTA UNIVERSITATIS» (Serbia) since 2007
3. Intergovernmental Russian-Indian Commision on cooperation, 2010, 2014
4. Intergovernmental Russian-Italian Commision on cooperation, 2012
5. SAE, since 2012
6. Editorial board of journal “Mechatronics, Automation, Control» (Russia) since 2014
7. Editorial board of journal “Vestnik of SPII RAN» (Russia) since 2015

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