Aleksey Pyavchenko

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1. Education

University	Degree	Year	Specialization
Taganrog State University of Radio Engineering (Russia, Rostov region, Taganrog)	Engineer in Computer Science.	1983	Computer Engineering
Taganrog State University of Radio Engineering (Russia, Rostov region, Taganrog)	Candidate of Engineering Sciences	1992	Computer Engineering

2. Professional qualification

Job Title	Years	Place of the work
Engineer, Research and Design Bureau "MIUS"	1983 - 1986	Taganrog State University of Radio Engineering (Russia, Rostov region, Taganrog)
Post-graduate student, Department of Computer Engineering	1986 - 1989	
Assistant, Department of Computer Engineering	1989 – 1992	
Acting assistant professor, Department of Computer Engineering	1992 - 1996	
Assistant professor, Department of Computer Engineering	1996 - 2007	
Associate professor, Department of Computer Engineering	2007 - Present	Southern Federal University, Russia
Senior researcher of Science and Research laboratory "Problem-oriented multiprocessing and neuroprocessing computing systems" on the basis of the Department of Computer Engineering	2007 - Present	

3. Educational work

Academics Courses:

- Architecture, programming and design of high-performance ARM microsystems.
- Microcontroller systems.
- Technical support of automated systems.
- Design of technical components of automated systems.
- HDL-design of digital devices

and others.

Pyavchenko A. is the leading lecturer and some students scientific advisor

4. Research interests

Main scientific and applied interests consist in:

– Research and development of architectural solutions for information and computing complexes of automated processing and control systems, high-performance problem-oriented computing and communication kernels, embedded intellectual hardware and software, including neural network information processing.

– Research and development of algorithms for intelligent behavior of mobile robots, considering the influence of various disturbance factors.

– Design of laboratory prototypes of new high-performance problem-oriented computing systems, their processor and communication components using modern FPGA technologies.

5. Research projects

Role: Senior researcher, team leader

1. Research and development of principles for constructing a quantum computing simulation system with built-in hardware support (executor of the RFBR grant N 20-07-00916, 2020).

2. Development and research of the principles of constructing adaptive high-performance intelligent computing systems for uninhabited mobile robotic platforms for collective data collection and information processing about a multidimensional problematic environment (Employer: the Ministry of education and science of the Russian Federation, 2017 - 2019, RUSSIA.

3. Development and research of the principles for constructing high-performance intelligent computer systems implemented on the basis of neural network and quantum computing, oriented to the use in control systems of autonomous uninhabited devices functioning in a priori unformalized problematic environments (Employer: the Ministry of education and science of the Russian Federation, 2014 - 2016, RUSSIA).

4. The development of theory and methods of intelligent position-trajectory control systems of mobile objects with uncertainty (Employer: The Russian scientific Fund, 2014- 2016, RUSSIA).

5. Development and research algorithmic basis and implements it on the basis of on-Board multi-core specialized computer-oriented automatic resolution of real-time 2D navigation tasks (Employer: SFEDU, 2013, RUSSIA)

6. Publications:

Over the past 5 years, 54 scientific and educational-methodical works have been published in co-authorship, including 2 monographs (one in English), 3 scientific statistics in journals indexed in Scopus / WoS, 5 tutorial textbooks.

Monographs:

Guzik V., Pyavchenko A., Pereverzev V., Saprykin R., Pshikhopov V. Neural networking path planning based on neural-like structures // Path Planning for Vehicles Operating in Uncertain 2D Environments, Elsevier, Butterworth-Heinemann, 2017. - pp. 25-96; ISBN 978-0-12-812305-8.**(Scopus)**

Beloglazov D.A., Guzik V.Ph., Medvedev M.Yu. and etc. Intelligent technologies for planning the movements of moving objects in three-dimensional non-deterministic environments/ edited by ed. V.Kh. Pshikhopov - M.: Publishing House “Science” 2017. - 232 c.; ISBN 978-5-2-39996-9.