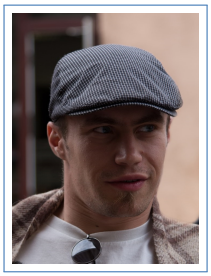

Aleksandr I. Panov

Curriculum Vitae

Educational Background

2011–2015 **Ph.D. in Theoretical Bases of Computer Science**, *Institute for Systems Analysis*, Moscow, Russia.
Specialized in modelling of goal-oriented behavior of intelligent agents and their coalitions

2009–2011 **Master of Applied Mathematics and Physics**, *Moscow Institute of Physics and Technology*, Moscow, Russia.
Specialized in logical methods (AQ, JSM) of data mining and multiagent systems

2005–2009 **Bachelor of Physics**, *Novosibirsk State University*, Novosibirsk, Russia.
Specialized in semantic integration of databases

Research Experience

2015–Present **Research Fellow**, National Research University Higher School of Economics, Laboratory of Process-Aware Information Systems (PAIS Lab), Moscow, Russia.

- Investigation of learning mechanisms based on sign representations in the problem of collective behavior planning.

2010–Present **Research Fellow**, Federal Research Center "Computer Science and Control" of Russian Academy of Sciences, Laboratory of Dynamic Intelligent Systems, Moscow, Russia.

- Cognitive modelling:
  - Proposed the models of a number of cognitive functions of consciousness based on the so-called "semiotic mediation".
  - Proposed a model of the sign and investigated procedures of the sign formation.
  - Proposed biologically inspired models of sign components: image, significance and personal meaning.
- Maching learning and multi-agent systems:
  - Developed the composite logical method to extract cause-effect relationships.
  - Investigated some models of coalition formation and role distribution in the collective of intelligent agents.

pr-t 60-letiya Octyabrya, 9 – Moscow, Russia
+7 (916) 144 5255 • ☎ +7 (499) 137 7310 • ✉ pan@isa.ru
hse.ru/en/staff/apanov

Teaching Experience

2015–Present **Senior lecturer**, *National Research University Higher School of Economics*, Faculty of Computer Science, Moscow, Russia.
Seminar on Intelligent Data Mining

2011–Present **Assistant lecturer**, *Moscow Institute of Physics and Technology*, Department of Computer Science, Moscow, Russia.
Seminar on Basis of Operation Systems and Basis of Object-Oriented Programming

2011–2016 **Assistant lecturer**, *Peoples' Friendship University of Russia*, Department of Computer Science, Moscow, Russia.
Lectures on Intelligent Dynamic Systems, Theoretical Computer Science and Intelligent Data Analysis

Research Grants

As a head

2016–Present **Grant for postdocs**, *Russian Foundation for Basic Research (RFBR)*.
Investigation of learning mechanisms based on sign representations in the problem of collective behavior planning.

2014–2015 **Grant for young scientists**, *Russian Foundation for Basic Research (RFBR)*.
Investigate of mechanisms for the distribution of roles in the collective of intelligent agents to solve the problem to identify cause-and-effect relationships on the set of domain events.

As a senior researcher

2016–Present **Grant in priority thematic research areas**, *Russian Science Foundation (RSF)*, research adviser: Prof. Gennady S. Osipov.
Creation of theory, methods and models for distributed control of behavior of cognitive robotic systems and their coalitions in nondeterministic environment.

2015–Present **Individual grant**, *Russian Foundation for Basic Research (RFBR)*, research adviser: Prof. Gennady S. Osipov.
Neurophysiological and psychological foundations of sign models of the world and cognitive functions.

2015–Present **Grant for young headers**, *Russian Foundation for Basic Research (RFBR)*, research adviser: Ph.D. Konstantin S. Yakovlev.
Path planning methods and algorithms in the context of cooperative task solving for intelligent agents.

Research Interests

- Modelling of cognitive processes
- Semiotics
- Pattern recognition
- Multi-agent systems
- Modelling of attention
- Machine learning

Committees and Councils

2016–present Member of the Editorial Board of the *Biologically Inspired Cognitive Architectures*: BICA Journal, `http://www.journals.elsevier.com/biologically-inspired-cognitive-architectures/`

2016–Present Member of The Biologically Inspired Cognitive Architectures Society: BICA Society, `bicasociety.org`

2016–Present Executive Chair of the Organizing Committee of the First International Early Research Career Enhancement School on Biologically Inspired Cognitive Architectures: Fierces on BICA, `school.bicasociety.org`

2015–Present Regular Fellow of the Russian Association of the Artificial Intelligence: RAAI, `www.raai.org`

2015–Present Member of the NEURONET workgroup of the National Technology Initiative: NTI, `www.asi.ru/nti/`

Selected Publications

[1] G. S. Osipov, A. I. Panov, and N. V. Chudova. "Behavior control as a function of consciousness. I. World model and goal setting". In: *Journal of Computer and Systems Sciences International* 53.4 (2014), pp. 517–529.

[2] A. I. Panov. "Extraction of Cause-Effect Relationships from Psychological Test Data Using Logical Methods". In: *Scientific and Technical Information Processing* 41.5 (2014), pp. 275–282.

[3] A. Yu. Lupatov, A. I. Panov, R. E. Suvorov, A. V. Shvets, K. N. Yarygin, and G. D. Volkova. "Assessment of Dendritic Cell Therapy Effectiveness Based on the Feature Extraction from Scientific Publications". In: *Proceedings of ICPRAM 2015 - 4th International Conference on Pattern Recognition Applications and Methods*. Ed. by M. Figueiredo, A. Fred, and M. De Marsico. Vol. 2. SciTePress, 2015, pp. 270–276.

[4] G. S. Osipov, A. I. Panov, and N. V. Chudova. "Behavior Control as a Function of Consciousness. II. Synthesis of a Behavior Plan". In: *Journal of Computer and Systems Sciences International* 54.6 (2015), pp. 882–896.

[5] A. I. Panov, A. V. Shvets, and G. D. Volkova. "A Technique for Retrieving Cause and Effect Relationships from Optimized Fact Bases". In: *Scientific and Technical Information Processing* 42.6 (2015), pp. 420–425.

[6] Stanislav Emel'yanov, Dmitry Makarov, Aleksandr I. Panov, and Konstantin Yakovlev. "Multilayer cognitive architecture for UAV control". In: *Cognitive Systems Research* 39 (2016), pp. 58–72.

[7] Aleksandr I. Panov and Konstantin S. Yakovlev. "Behavior and path planning for the coalition of cognitive robots in smart relocation tasks". In: *Robot Intelligence Technology and Applications 4*. Ed. by Jong-Hwan Kim, Fakhri Karray, Jun Jo, Peter Sincak, and Hyun Myung. Advances in Intelligent Systems and Computing. 2016, (In Press).

[8] Aleksey Skrynnik, Alexander Petrov, and Aleksandr I. Panov. "Hierarchical temporal memory implementation with explicit states extraction". In: *Biologically Inspired Cognitive Architectures (BICA) for Young Scientists*. Ed. by Alexei V. Samsonovich, Valentin V. Klimov, and Galina V. Rybina. Advances in Intelligent Systems and Computing. Springer International Publishing, 2016, pp. 219–225.