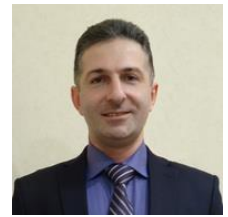


# Andranik S. Akopov

## POSITION

Professor of the National Research University Higher School of Economics, Moscow  
Business Analytic Department



## CONTACTS:

Tel.: +7 (915) 068-6091

E-mail: [aakopov@hse.ru](mailto:aakopov@hse.ru)

Address: 33, Kirpichnaya Str., Moscow, Russia

Home page: <http://www.hse.ru/org/persons/10440669>

## ● UNIVERSITY EDUCATION AND ACADEMIC DEGREES:

- 2018: Full Professor
- 2009: Doctor of Engineering Degree. Dissertation defined in the Dorodnicyn Computing Centre of the Russian Academy of Sciences (CCRAS). Specialization: Computer Science.
- 2000: Ph.D. in Economics. Dissertation defined in the Central Economics and Mathematics Institute of the Russian Academy of Sciences. Specialization: Mathematical Methods of Economics.
- 1997-2000: Postgraduate student of the Central Economics and Mathematics Institute of the Russian Academy of Sciences.
- 1997: Diploma of Engineer of the Moscow Aviation Institute (National Research University). Specialization: telecommunication systems and information technologies.
- 1991-1997: Student of the Moscow Aviation Institute (National Research University).

## ● TEACHING AND RESEARCH EXPERIENCE:

**2009 - Present: Professor of the National Research University Higher School of Economics (HSE), Business Analytic Department, Faculty of Business Informatics, Moscow.**

- Researching in Computer Science and Simulation: creating new evolutionary algorithms, designing intellectual systems, creating different simulations (using of Powersim Studio and AnyLogic), parallel computing, etc.
- Teaching in the field of Computer Science:
  - Simulation methods and tools: system dynamics, discrete event modeling, agent based modeling, etc.
  - Optimization methods and algorithms: genetic algorithms, neural networks, stochastic modeling and optimization, etc.
  - CGE modeling (Computable General Equilibrium Models).
  - Mathematical methods in economics.
  - Databases and Data Warehouses (SAP BW, Oracle DWH).
  - Dynamic Balanced Scorecard Systems.
  - Business Intelligence Systems.
  - Advanced Data Management.
- Graduate Business Informatics (Master Studies).
- Supervision of Masters of Science and PhD candidates.

**2000 - Present: *Chief Researcher of the Central Economics and Mathematics Institute of Russian Academia of Science***

- Researching in Economics.
- Developing CGE and DSGE models.
- Agent-based modeling in economics.
- Macroeconomics analysis and forecasting.
- Developing Situation Centre of CEMI RAS.
- Creating and implementing simulations in organizations.

● **BUSINESS EXPERIENCE:**

Consultancy experience for such companies and organizations as:

- SBERBANK
- ROSNEFT
- LUKOIL
- Financial Corporation URALSIB
- Non-government pension fund BLAGOSOSTOYANIE
- Bank ZENIT
- Rosobrnadzor of the Russian Federation
- The Ministry of education and science of the Russian Federation
- The State Atomic Energy Corporation ROSATOM
- and other companies and organizations...

● **KEY SKILLS:**

- Over ten years' operational experience in Business Intelligence and Data Warehouses: SAP BW, Oracle DWH, Cognos BI, SAP SEM, ETL (ABAP, BAPI), programming of extractors, integration of ERP and BW, WEB programming (Dashboards, KPI).
- Over ten years' operational experience in Computer Science: simulation and optimization methods and tools, evolutionary computing (genetic algorithms), multi-agent based modeling, embedded distributed systems, natural networks, resource management, parallel calculations.
- Excellent experience in the Evolutionary Computing: Genetics Algorithms, Neural Networks, Neural controllers, etc.
- Excellent experience in the Simulation: system dynamics, dynamic systems, agent-based simulation, discrete-event modelling, stochastic modeling, etc.
- Solid experience with databases and data warehouses: SAP BW, Oracle and MS SQL Server; Practical experience of work with DWH, experience of using of OLAP of technologies; Knowledge of methods CASE-of modeling (RR, ErWin, etc.).
- Deep knowledge in Oil&Gas industry (E&P data management, simulation of KPI in UPSTREAM and DOWNSTREAM, Capital Planning and Optimization, researching and modeling the life-cycle of oilfields, maximization of oil production by investments).
- Wide knowledge in radio electronics (digital signal processing, coding and decoding, scrambling, satellite communication, receivers and transmitters, etc.).

- **COMPUTER SKILLS:**

- **Business Intelligence Systems:** SAP BW (hold a certificate), IBM Cognos BI.
- **Simulation tools:** Powersim Studio, Powersim SDK, AnyLogic, Simulink, IBM CPLEX.
- **Programming languages:** Java, C++ (MPI, boost), Python, PHP.
- **Programming tools:** Microsoft Visual Studio (C#, C++, VB.NET), IntelliJ IDEA, Eclipse.
- **Data Bases and Data Warehouse:** SAP BW, SAP HANA, Oracle (PL/SQL, Oracle Objects for OLE, OCI, OEM), MS SQL Server (TSQL), etc.
- **Programming technologies:** COM/COM+, ActiveX, MTS, ODBC/JDBC/ADO, Spreadsheet, OLE, Crystal Report etc.
- **CASE – technologies:** Rational Rose (UML), ErWin/BpWin, ARIS.
- **WEB- technologies:** J2EE: Java core 8, JSP, JSF, EJB, JAX-WS, JAX-B, SOAP, REST, etc.

- **LANGUAGES:** English: *fluent*  
Russian: *native*

- **KEY PUBLICATIONS:**

1. Khachatryan N.K., Akopov A.S., Belousov F.A. (2018). About quasi-solutions of traveling wave type in models for organizing cargo transportation. *Business Informatics*, 1 (43), pp. 61-70.
2. Akopov A.S., Beklaryan L. A., Saghatelyan A. K. (2017). Agent-based modelling for ecological economics: A case study of the Republic of Armenia. *Ecological Modelling*, 346, pp. 99-118.
3. Akopov A. S., Beklaryan A., Saghatelyan A. K., Sahakyan L. V. Control system for ecological modernization of enterprises (on the example of the Republic of Armenia). *Business Informatics*. 2016. No. 2(36). P. 71-78
4. Beklaryan A., Akopov A.S. (2016). Simulation of Agent-rescuer Behaviour in Emergency Based on Modified Fuzzy Clustering, in: *AAMAS'16: Proceedings of the 2016 International Conference on Autonomous Agents & Multiagent Systems*. Richland: International Foundation for Autonomous Agents and Multiagent Systems, pp. 1275-1276.
5. Akopov A. S., Beklaryan A.L. (2015). An Agent Model of Crowd Behavior in Emergencies. *Automation and Remote Control*, 10, pp. 1817-1827.
6. Akopov A. S., Beklaryan G.L. (2014) Modelling the dynamics of the “Smarter Region”. In *Proceedings of 2014 IEEE Computational Intelligence for Financial Engineering and Economics*, pp. 203 – 209.
7. Akopov A. S. (2014) Parallel genetic algorithm with fading selection. *International Journal of Computer Applications in Technology*, pp. 325 – 331.
8. Akopov A. S., Hevencev M. A. (2013) Multi-agent genetic algorithm for multi-objective optimization”, In *Proceedings of 2013 IEEE International Conference on Systems, Man and Cybernetics*, pp. 1391 – 1396.
9. Akopov A. S. (2012) Designing of integrated system-dynamics models for an oil company. *International Journal of Computer Applications in Technology*, 45(4), pp. 220 – 230.
10. Akopov A.S., Beklaryan L.A. (2012). Simulation of human crowd behavior in extreme

- situations. *International Journal of Pure and Applied Mathematics*. Vol. 79. No. 1. pp. 121–138.
11. Akopov A . S . (2011) Model of adaptive control of complex organizational structure.
  12. *International Journal of Pure and Applied Mathematics*, Vol. 71, No. 1. pp. 105–127.

1. Akopov A.S. (2009) “Hybrid Intelligent Systems of the management of vertical-integrated organization structures”. Working Paper # WP/2009/267.-Moscow, CEMI Russian Academy of Science,– 54 p.
2. Akopov A.S. (2006) Computer model of the oil refining enterprise. *Dynamics of non-homogeneous systems. Series of “Works of Institute of the System Analysis of the Russian Academy of Sciences”*, № 10 (2), pp. 268–280
3. Akopov A.S. (2006) Computer model of transportation of oil products. *Dynamics of non-homogeneous systems. Series of “Works of Institute of the System Analysis of the Russian Academy of Sciences”*, № 10 (2), pp. 281–293
4. Akopov A.S. (2006) “Application of the modified genetic algorithm in a control system of the oil refining enterprise”. *Dynamics of non-homogeneous systems. Series of “Works of Institute of the System Analysis of the Russian Academy of Sciences”*, № 25 (1), pp.7–19.
5. Akopov A.S. (2004) “Support for Decision-Making for Upstream Enterprises with Dynamic Simulation Models Help”. *Control Systems and Information Technology*, vol. 4(16), pp.50–55.
6. Akopov A.S. (2004) “Using of Dynamic Simulation Models for Decision-Making Support in Oil and Gas Industry”. *Control Systems and Information Technology*, vol. 2(14), p. 72–79.

**Amount of all publications is more than 50, most of them in Computer Science, Control Science, and Mathematical methods in Economics.**

● **INTERNATIONAL CONFERENCES AND SEMINARS (SELECTED LIST):**

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| <b>27-28/04/2014,<br/>London, UK</b>                   | <b>2014 IEEE Computational Intelligence for Financial Engineering and Economics</b><br>Paper: “Modelling the dynamics of the Smarter Region”   |
| <b>13-17/10/2013,<br/>Manchester, UK</b>               | <b>2013 IEEE International Conference on Systems, Man and Cybernetics</b><br>Paper: “Multi-agent genetic algorithm for multi-objective optimization”   |
| <b>16-22/09/2012,<br/>Budva, Montenegro</b>            | <b>International scientific conference «Intellectualization of data processing 2012»</b><br>Paper: “Simulation of human crowd behavior in extreme situations”  |
| <b>26/06 – 06/07/2012<br/>Tsakhkadzor,<br/>Armenia</b> | <b>VII International school-seminar "Multidimensional Statistical Analysis and Econometrics"</b><br>Paper: “Design of the WEB-oriented information and analytical systems for realization of econometric models” |

● **CERTIFICATIONS:**

SAP Business Warehouse Solution Consultant (2006, SAP AG).

Learning Mathematical Programming for IBM ILOG CPLEX Optimization Studio (2013, IBM).

Model Development with IBM ILOG CPLEX Optimization Studio (2013, IBM).

● **AWARDERS:**

“The Best Economist of Russian Academia of Science (2004)”.

● **MEMBERSHIPS:**

Institute of Electrical and Electronics Engineers (IEEE), IEEE Systems, Man and Cybernetics Society, System Dynamics Society.