

Alexander Rummyantsev

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Experience

Vocational

2010–present **Researcher**, *Institute of Applied Mathematical Research (Karelian Research Centre of the Russian Academy of Sciences)*, Petrozavodsk.

- o scientific research in the fields of stochastic analysis of high-performance, parallel, distributed computing systems, energy efficiency;
- o high performance cluster administration and user support.

2014–present **Senior Lecturer**, *Petrozavodsk State University*, Petrozavodsk.

Current and previous courses:

- o High-Performance Data Analysis with R Language
- o High-Performance and Distributed Computing
- o Stochastic Modeling

Projects

2012–2014 **Project manager**, *Data centers energy efficiency improvement based on predictive modeling*, UMNIIK (FASIE).

2014–2015 **Project manager**, *Project 14-07-31007: Development of mathematical models and software for workload prediction of high performance datacenters*, Russian Foundation for Basic Research.

2010–present **Participant**, *Projects 10-07-00017, 12-07-31147, 13-07-00008, 13-07-98801, 15-07-02341, 15-07-02354, 15-29-07974, 16-07-00622, 16-47-100168*, Russian Foundation for Basic Research.

Research

PhD thesis *Probabilistic analysis of workload process of high-performance cluster* (scientific advisor D. Sc., Prof. Evsey V. Morozov) A new stochastic model for workload of high-performance computing cluster is analyzed and experimentally verified. A package for R system is developed.

Publications Over 30

Conferences Over 35

Research Interests

- ‡ Stochastic Processes, Queueing Systems;
- † High-Performance and Distributed Computing;
- * Multi-Core and Many-Core Systems.

Selected Papers

- 2016 Morozov E., Rumyantsev A. Stability Analysis of a MAP/M/s Cluster Model by Matrix-Analytic Method. Lecture Notes in Computer Science, Vol. 9951. Springer International Publishing, 2016. P. 63–76. DOI: 10.1007/978-3-319-46433-6_5
- 2016 Morozov E., Potakhina L., Rumyantsev A. Stability Analysis and Simulation of a State-Dependent Transmission Rate System. Advances in Intelligent Systems and Computing, Vol. 391. Springer International Publishing, 2016. Pp. 673-683. DOI: 10.1007/978-3-319-23437-3_58
- 2015 Rumyantsev A., Morozov E. Stability criterion of a multiserver model with simultaneous service. Ann Oper Res. 2015. P. 1-11. DOI: 10.1007/s10479-015-1917-2
- 2015 Rumyantsev A. An HPC Upgrade/Downgrade that Provides Workload Stability. Parallel Computing Technologies. Lecture Notes in Computer Science. Springer International Publishing, 2015. Pp. 279-284. DOI: 10.1007/978-3-319-21909-7_28
- 2015 Morozov E., Rumyantsev A. A State-Dependent Control for Green Computing. Information Sciences and Systems 2015. Lecture Notes in Electrical Engineering. Springer International Publishing, 2015. Pp. 57-67. DOI: 10.1007/978-3-319-22635-4_5
- 2015 Rumyantsev A., Morozov E. Accelerated Verification of Stability of Simultaneous Service Multiserver Systems. Proceedings of 2015 7th International Congress on Ultra Modern Telecommunications and Control Systems and Workshops (ICUMT), Brno, Czech Republic, 6-8 October 2015. IEEE, 2015. Pp. 239-242. DOI: 10.1109/ICUMT.2015.7382435
- 2015 A. Rumyantsev. Simulating Supercomputer Workload with hpcwld package for R. Proceedings of 2014 15th International Conference on Parallel and Distributed Computing, Applications and Technologies. IEEE, 2015. P. 138-143. DOI:10.1109/PDCAT.2014.36

Certification

- 2016 Best Paper Award, 23th Computer Network Conference (Brunow, Poland)
- 2014 Certificate for completing the entrepreneurship development course, Commercialization Pathfinder (CRDF Global)
- 2014 Certificate of Interning, Energy Efficiency and Resource Saving: Experience from the Countries of the European North (Oulu, Finland)
- 2013 Project management in entrepreneurship: innovations and IT technologies (Petrozavodsk)
- 2012 Summer Supercomputer Academia (Moscow), certificate for basic level of HPC knowledge
- 2010 Certificate for basic level, Intel Parallel Programming Professional

Education

- 2008–2012 **PhD**, *Russian Academy of Science (Karelian Research Center, Institute of Applied Mathematical Research)*, specialization: 05.13.18, *mathematical modeling, numerical methods and program systems*.
- 2006–2008 **Master**, *Petrozavodsk State University*, Faculty of Mathematics, diploma with honors.