

## Anton Beloglazov

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### CONTACT INFORMATION

Dept. of Computing and Information Systems  
The University of Melbourne  
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### EDUCATION

#### **Ph.D. in Computer Science**

03/2009 – Present

*Department of Computing and Information Systems,  
Faculty of Engineering, The University of Melbourne, Australia*

Thesis: Energy and performance efficient resource management in virtualized data centers for Cloud computing.

Supervisor: Prof. Rajkumar Buyya.

I am leading the [GreenCloud Project](#). Current focus is on policies and algorithms for continuous consolidation of virtual machines in virtualized Cloud data centers in order to minimize energy consumption, while maintaining the required Quality of Service defined in terms of Service Level Agreements.

I have contributed to the development of the [CloudSim Toolkit](#), a framework for simulation of Cloud computing infrastructures, and an extension for the framework allowing power-aware simulations.

#### **M.Sc. in Informatics and Computer Science**

09/2006 – 06/2008

*Faculty of Automation and Computer Engineering,  
Novosibirsk State Technical University, Russia*

Master's thesis: Research and development of the algorithms and software for the remote execution of simulation programs on multicomputers.

Average grade is 4.81 out of 5. Grade percentage is 96%. The 3rd in the final graduating class.

Honors: mark 5 out of 5 possible for the Master's thesis. The research work is a part of a project supported by Russian Foundation for Basic Research Grant N 05-07-98003 and Russian Academy of Sciences Grant N 15.2.

#### **B.Sc. in Informatics and Computer Science**

09/2002 – 06/2006

*Faculty of Automation and Computer Engineering,  
Novosibirsk State Technical University, Russia*

Bachelor's thesis: Development of a program model for studying local networking principles under the channel and physical levels standards.

Honors: mark 5 out of 5 possible for the Bachelor's thesis. The 10th out of 70 students in the final graduating class.

### COMPUTER SKILLS

- Java, Clojure, Scala, C/C++, C#, Python, Haskell, Erlang, PHP, SQL (MySQL, PostgreSQL), XML, JavaScript, HTML, CSS, UML, LaTeX, Simulation (AnyLogic, OMNeT++), CVS, SVN, Git, Ant, Maven.
- Design patterns, test-driven development, web development, web services.
- Linux and Windows system administration.

PROFESSIONAL  
EXPERIENCE

**Research Intern at IBM Research – Australia**

06/2011 – Present

**Research Intern at IBM Research – India**

09/2010 – 12/2010

Research topic: Framework for IT Service Delivery Simulation Models.

The research aims at understanding a variety of IT service delivery contexts and simulation models, extracting common elements, and implementing a library of reusable parts, to demonstrate the feasibility of this approach and its efficiency in generating new models of service variants. The work leverages the initial models created by the IBM Research teams in Watson and India and builds a product line structure for the family of models required by IBM's Global Delivery teams.

**Open source projects**

09/2009 – Present

[CloudSim](#) – a Java framework for modeling and simulation of Cloud computing infrastructures and services.

[clj-genetic](#) – a Clojure library for solving optimization problems using real-coded Genetic Algorithms.

[clj-predicates](#) – a small Clojure library of useful predicate functions missing in the core Clojure library.

[clojure-archetype-servlet](#) – a Maven archetype for creating a blank Clojure servlet project set up for Jetty with auto-compilation and reloading.

[Google Docs Upload](#) – a tool for batch uploading documents to a Google Docs account using GData Java API.

[Zotero Scholar Citations](#) – a plugin for [Zotero](#) (research sources management tool) for auto-fetching the number of citations from Google Scholar.

[Favorite URL Opener](#) – an extension for Google Chrome allowing the user to open multiple saved URLs in one click.

[bottom-hover-clock](#) – a simple extension for Gnome 3 that display a pop-up with current date and time when the mouse is moved to the bottom of the screen.

**Web-developer**

08/2008 – 02/2009

*XIAG AG, Zürich, Switzerland; Novosibirsk, Russia*

Web-applications development using PHP, MySQL, PostgreSQL, Javascript, HTML, CSS (40 hours per week). I was involved in development of the following projects:

- <http://engadin.stmoritz.ch/>
- <http://www.giveawine.ch/>

Apart from that, I have developed an internal tool for cron jobs monitoring and several other small applications. I have also worked on improvement of the CMS and the company's core PHP framework.

**Research assistant**

09/2006 – 06/2008

*Laboratory of Parallel Algorithms and Structures, Supercomputer Software Department, Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia*

Academic advisor – A/Prof. S. V. Piskunov, Ph.D., head of the laboratory.

**Programmer**

02/2007 – 08/2008

*SB RAS Publishing, Novosibirsk, Russia*

Web-site development, support, content management.

**Web-developer**

06/2002 - 08/2008

*Freelance*

Web-site development using PHP, MySQL, Javascript, HTML, CSS. About 20 projects, for example:

- <http://express-prigorod.ru/>
- <http://www.ochistkakotlov.ru/>
- <http://www.defrag.ru/>

**Web-developer**

06/2004 – 09/2004

*Softomate LLC, Novosibirsk, Russia*

Web-sites development using PHP, MySQL, Javascript, HTML, CSS.

**Web-developer**

06/2003 – 09/2003

*WebMotion, Novosibirsk, Russia*

Web-sites development using PHP, MySQL, Javascript, HTML, CSS.

CERTIFICATIONS

**Basis of OS Linux administration**

09/2007 – 02/2008

*Training Center of Mathematics and Computer Science, Faculty of Applied Mathematics and Computer Science, Novosibirsk State Technical University, Novosibirsk, Russia*

**Information-Telecommunication Systems**

11/2007 – 12/2007

*Faculty of Advanced Training, Novosibirsk State Technical University, Novosibirsk, Russia*

SCHOLARSHIPS  
AND AWARDS

**International Postgraduate Research Scholarship (IPRS)**

03/2009 – 03/2012

**Melbourne International Research Scholarship (MIRS)**

03/2009 – 03/2012

**Microsoft Research and EII Fellowship for 2011 EII PhD School**

09/2011

**The best presentation at the “NSTU Days of Science – 2008”**

03/2008

**Russian Federation Academic Scholarship**

02/2003 – 06/2008

BOOK CHAPTERS

**Anton Beloglazov**, Rajkumar Buyya, Young Choon Lee, and Albert Zomaya, “A Taxonomy and Survey of Energy-Efficient Data Centers and Cloud Computing Systems”, *Advances in Computers*, Marvin V. Zelkowitz (editor), Volume 82, Pages: 47-111, ISSN: 0065-2458, Elsevier, 2011, DOI: 10.1016/B978-0-12-385512-1.00003-7.

JOURNAL  
PUBLICATIONS

**Anton Beloglazov**, and Rajkumar Buyya, “Optimal Online Deterministic Algorithms and Adaptive Heuristics for Energy and Performance Efficient Dynamic Consolidation of Virtual Machines in Cloud Data Centers”, *Concurrency and Computation: Practice and Experience (CCPE)*, Wiley Press, New York, USA, 2011, DOI: 10.1002/cpe.1867 (in press, accepted on September 2, 2011).

**Anton Beloglazov**, Jemal Abawajy, and Rajkumar Buyya, “Energy-Aware Resource Allocation Heuristics for Efficient Management of Data Centers for Cloud Computing”, *The International Journal of Grid Computing and eScience, Future Generation Computer Systems (FGCS)*, Volume 28, Issue 5, Pages: 755-768, Elsevier Science, Amsterdam, The Netherlands, May 2012, DOI: 10.1016/j.future.2011.04.017.

	<p>Kyong Hoon Kim, <b>Anton Beloglazov</b>, and Rajkumar Buyya, “Power-Aware Provisioning of Virtual Machines for Real-time Cloud Services”, <i>Concurrency and Computation: Practice and Experience (CCPE)</i>, Volume 23, Issue 13, Pages: 1492-1505, Wiley Press, New York, USA, 2011, DOI: 10.1002/cpe.1712.</p> <p>Rodrigo N. Calheiros, Rajiv Ranjan, <b>Anton Beloglazov</b>, Cesar A. F. De Rose, and Rajkumar Buyya, “CloudSim: A Toolkit for Modeling and Simulation of Cloud Computing Environments and Evaluation of Resource Provisioning Algorithms”, <i>Software: Practice and Experience (SPE)</i>, Volume 41, Number 1, Pages: 23-50, ISSN: 0038-0644, Wiley Press, New York, USA, January, 2011, DOI: 10.1002/spe.995.</p>
CONFERENCE PUBLICATIONS	<p><b>Anton Beloglazov</b>, and Rajkumar Buyya, “Adaptive Threshold-Based Approach for Energy-Efficient Consolidation of Virtual Machines in Cloud Data Centers”, <i>Proceedings of the 8th International Workshop on Middleware for Grids, Clouds and e-Science (MGC 2010)</i>, Bangalore, India: ACM, November 29 – December 3, 2010.</p> <p>Rajkumar Buyya, <b>Anton Beloglazov</b>, and Jemal Abawajy, “Energy-Efficient Management of Data Center Resources for Cloud Computing: A Vision, Architectural Elements, and Open Challenges”, <i>Proceedings of the 2010 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA 2010)</i>, Las Vegas, USA, July 12-15, 2010 – Keynote Paper.</p> <p><b>Anton Beloglazov</b>, and Rajkumar Buyya, “Energy Efficient Resource Management in Virtualized Cloud Data Centers”, <i>IEEE TCSC Doctoral Symposium, Proceedings of the 10th IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid 2010)</i>, Melbourne, Australia, May 17-20, 2010.</p> <p>Kyong Hoon Kim, <b>Anton Beloglazov</b>, and Rajkumar Buyya, “Power-Aware Provisioning of Cloud Resources for Real-time Services”, <i>Proceedings of the 7th International Workshop on Middleware for Grids, Clouds and e-Science (MGC 2009)</i>, Urbana Champaign, Illinois, USA: ACM, 2009.</p> <p><b>Anton Beloglazov</b>, and Sergey Piskunov, “An Algorithm for Two-Level Scheduling of Parallel Tasks”, <i>Proceedings of the All-Russian Science Conference of Young Scientists “Science. Technologies. Innovations.”</i>, Part 1, Novosibirsk, Russia, December 6-9, 2007, pp. 164-168.</p> <p><b>Anton Beloglazov</b>, and Sergey Piskunov, “A System for Remote Execution of Simulation Programs on Multicomputers”, <i>Works of ICMaMG SB RAS, Series of Computer Science</i>, Number 7, Novosibirsk, Russia, 2007, pp. 181-186.</p>
POSTERS	<p><b>Anton Beloglazov</b>, and Rajkumar Buyya, “Energy-Efficient Consolidation of Virtual Machines in Cloud Data Centers”, <i>Proceedings of the IBM Collaborative Academia Research Exchange Workshop (I-CARE 2010)</i>, Bangalore, India, October 22, 2010.</p> <p><b>Anton Beloglazov</b>, and Rajkumar Buyya, “Energy Efficient Allocation of Virtual Machines in Cloud Data Centers”, <i>Proceedings of the 10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2010)</i>, Melbourne, Australia, May 17-20, 2010.</p> <p><b>Anton Beloglazov</b>, and Rajkumar Buyya, “Power and Performance Efficient Resource Management in Cloud Computing”, <i>Proceedings of the IEEE Science and Engineering Graduate Research Expo 2009</i>, Melbourne, Australia, 2009, pp. 38-40.</p>
TEACHING EXPERIENCE	<p><b>Professor’s aide – “Problems and success of Grid-technologies”</b> 2007  Faculty of Automation and Computer Engineering, Novosibirsk State Technical University, Novosibirsk, Russia</p>

Developed syllabus and overall course structure.

**Instructor – “Simulation of network systems in OMNeT++”** 2007  
*Faculty of Automation and Computer Engineering, Novosibirsk State Technical University, Novosibirsk, Russia*

Developed materials for laboratory practice.

**Instructor – “Distributed software implementation using CORBA”** 2007  
*Faculty of Automation and Computer Engineering, Novosibirsk State Technical University, Novosibirsk, Russia*

Developed materials for laboratory practice.

PROFESSIONAL  
SERVICES

**Paper reviewing for journals and conferences**

- Concurrency and Computation: Practice and Experience (CCPE), Wiley Press, USA.
- Future Generation Computer Systems (FGCS), Elsevier, The Netherlands.
- The International Journal of Science and Technology (Scientia Iranica), Elsevier, The Netherlands.
- IEEE Transactions on Parallel and Distributed Systems (TPDS), IEEE Press, USA.
- The Journal of Systems and Software (JSS), Elsevier, The Netherlands.
- The Journal of Parallel and Distributed Computing and Networks (PDCN), ACTA Press, Canada.
- The International Journal of Cloud Computing (IJCC), Inderscience, Switzerland.
- The International Journal of Computer and Telecommunications Networking (COMNET), Elsevier, The Netherlands.
- Software: Practice and Experience (SPE), Wiley Press, New York, USA.
- The 18th International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2010), Split, Dubrovnik, Croatia, September 23-25, 2010.
- The 17th IEEE International Conference on High Performance Computing (HiPC 2010), Goa, India, December 19-22, 2010.
- The 3rd IEEE International Workshop on Internet and Distributed Computing Systems (IDCS 2010), Melbourne, Australia, September 1-3, 2010.
- The Journal of Network and Computer Applications (JNCA), Elsevier, The Netherlands.
- The 18th European Conference on Information Systems (ECIS 2010), Pretoria, South Africa, June 7-9, 2010.

**Organization of scientific events**

- Technical Program Committee Member for the International Conference on Advances in Cloud Computing (ACC-2012), Bangalore, India, July 26-28, 2012.
- Technical Program Committee Member for the International Workshop on Collaborative Cloud (CollabCloud 2012), in conjunction with the 8th International Conference on Collaborative Computing: Networking, Applications and Worksharing, Pittsburgh, Pennsylvania, United States, October 14-17, 2012.

- Cyber Co-Chair for the 12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2012), Ottawa, Canada, May 13-16, 2012.
- Program Committee Member for the 1st International Workshop on Cloud Computing and Scientific Applications (CCSA 2011), Melbourne, Australia, December 5-7, 2011.
- Local Organizing Committee Member for the 4th IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2011), Melbourne, Australia, December 5-7, 2011.
- Technical Program Committee Member for the 6th International Workshop on Using P2P, Grid and Agents for the Development of Content Networks (UPGRADE-CN 2011), in conjunction with 11th IEEE/ACM Symposium on Cluster, Cloud and Grid Computing (CCGrid 2011), Newport Beach, CA, USA, May 23-26, 2011.
- Program Committee Member for the 3rd IEEE International Workshop on Internet and Distributed Computing Systems (IDCS 2010), Melbourne, Australia, September 1-3, 2010.
- Local Organizing Committee Member for the 10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2010), Melbourne, Australia, May 17-20, 2010.

#### **Other activities**

- Treasurer of the Postgraduate Group at the department of Computer Science and Software Engineering, the University of Melbourne, Australia, 2010 – Present.
- Non-Executive Committee member of the Postgraduate Group at the department of Computer Science and Software Engineering, the University of Melbourne, Australia, 2009 – Present.
- Postgraduate Seminar Coordinator at the department of Computer Science and Software Engineering, the University of Melbourne, Australia, 2009 – 2010.

#### **LANGUAGES**

- English – fluently.
- Russian – native speaker.

#### **REFERENCES**

Available upon request