Anton Beloglazov, PhD

Staff Researcher, IBM Research – Australia

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PROFESSIONAL INTERESTS

- Distributed systems
- Cloud computing
- Virtualization
- Functional programming
- Algorithm design and analysis
- Concurrency and scalability

EDUCATION

Ph.D. in Computer Science and Software Engineering 02/2009 – 02/2013
The University of Melbourne, Australia

> Thesis: Energy-Efficient Management of Virtual Machines in Data Centers for Cloud Computing
> Supervisor: Prof. Rajkumar Buyya

M.Sc. in Informatics and Computer Science 09/2006 – 06/2008
Novosibirsk State Technical University, Russia

B.Sc. in Informatics and Computer Science 09/2002 – 06/2006
Novosibirsk State Technical University, Russia

SKILLS

- Java, Python, Scala, C/C++, Clojure, Haskell, Bash, SQL, JavaScript, PHP
- Functional programming, test-driven development, design patterns, web services
- Linux and Windows system administration

SCHOLARSHIPS AND AWARDS

- International Postgraduate Research Scholarship (IPRS) 03/2009 – 03/2013
- Melbourne International Research Scholarship (MIRS) 03/2009 – 08/2012
- Microsoft Research and EII Fellowship for 2011 EII PhD School 09/2011
- The Best Presentation at NSTU Days of Science – 2008 03/2008
- Russian Federation Academic Scholarship 02/2003 – 06/2008

PROFESSIONAL EXPERIENCE

Staff Researcher at IBM Research – Australia 02/2013 – Present

Research area: Evacuation modelling and simulation.

The research focuses on modelling and simulation of bushfire evacuation scenarios, including evacuee behaviour modelling (e.g., population assignment, departure times, destination selection), applying an agent-based traffic simulator, post-simulation analysis (e.g., average speed per road segment, per-area egress and clearance times, fire exposure counts), and building tools for automating the modelling workflow.

Research Intern at IBM Research – Australia 06/2011 – 02/2013

Research area: Microscopic agent-based traffic simulation.

6-8 hours per week. The research focused on microscopic discrete event simulation of traffic and transportation systems using car-following models, such as the Intelligent Driver Model (IDM). The developed simulation models were applied to the optimization of the traffic flow, traffic light sequences, and road maintenance.

Research Intern at IBM Research – India 09/2010 – 12/2010

Research area: Simulation of IT service delivery systems.

The research aimed at understanding a variety of IT service delivery contexts and simulation models, extracting common elements, and implementing a library of reusable components, to demonstrate the feasibility of this approach and its efficiency in generating new models of service variants.

Web Developer 08/2008 – 02/2009
XIAG AG, Novosibirsk, Russia; headquaters in Zürich, Switzerland

Web Developer 02/2007 – 08/2008
SB RAS Publishing, Novosibirsk, Russia

Web Developer 06/2004 – 09/2004
Softomate LLC, Novosibirsk, Russia

Web Developer 06/2003 – 09/2003
WebMotion, Novosibirsk, Russia

Web Developer 06/2002 - 08/2008
Freelance

OPEN SOURCE **OpenStack Neat**

A Python framework for dynamic consolidation of virtual machines.

OpenStack Deployment Guide

A step-by-step guide and shell scripts for deploying OpenStack on CentOS using the KVM hypervisor and GlusterFS distributed file system.

CloudSim

A Java framework for modelling and simulation of Cloud computing systems.

Zotero Scholar Citations

A Zotero plugin for fetching citations from Google Scholar (> 13,000 users).

Favorite URL Opener

A Google Chrome extension for opening multiple saved URLs with one click.

vim-online-thesaurus

A Vim plugin for looking up words in an online thesaurus.

vim-textobj-quotes

A Vim plugin providing text objects for the closest pairs of quotes of any type.

arch-xmonad-zsh

A set of configuration files and shell scripts for setting up a desktop environment using Arch Linux, Xmonad, Zsh, Vim, etc.

clj-genetic

A Clojure library for implementing real-coded genetic algorithms.

github.com/beloglazov

More projects.

Book Chapters

1. **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, ISBN: 978-0-12-385512-1, Academic Press, USA, 2011.

Journal Publications (5)

2. **Anton Beloglazov** and Rajkumar Buyya, "Managing Overloaded Hosts for Dynamic Consolidation of Virtual Machines in Cloud Data Centers Under Quality of Service Constraints," *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Volume 24, Issue 7, Pages 1366-1379, IEEE CS Press, USA, 2013.

3. **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)*, Volume 24, Issue 13, Pages: 1397-1420, John Wiley & Sons, Ltd, USA, 2012.

4. **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, The Netherlands, 2012.

5. Kyong Hoon Kim, **Anton Beloglazov**, and Rajkumar Buyya, "Power-Aware Provisioning of Virtual Machines for Real-time Cloud Services," *Concurrency and Computation: Practice and Experience (CCPE)*, Volume 23, Issue 13, Pages: 1492-1505, John Wiley & Sons, Ltd, USA, 2011.

6. Rodrigo N. Calheiros, Rajiv Ranjan, **Anton Beloglazov**, 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," *Software: Practice and Experience (SPE)*, Volume 41, Number 1, Pages: 23-50, John Wiley & Sons, Ltd, USA, 2011.

Conference Publications (6)

7. **Anton Beloglazov** and Rajkumar Buyya, "Adaptive Threshold-Based Approach for Energy-Efficient Consolidation of Virtual Machines in Cloud Data Centers," *Proceedings of the 8th International Workshop on Middleware for Grids, Clouds and e-Science (MGC 2010)*, Bangalore, India: ACM, November 29 – December 3, 2010.

8. Rajkumar Buyya, **Anton Beloglazov**, and Jemal Abawajy, "Energy-Efficient Management of Data Center Resources for Cloud Computing: A Vision, Architectural Elements, and Open Challenges," *Proceedings of the 2010 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA 2010)*, Las Vegas, USA, July 12-15, 2010 – Keynote Paper.

9. **Anton Beloglazov** and Rajkumar Buyya, "Energy Efficient Resource Management in Virtualized Cloud Data Centers," *IEEE TCSC Doctoral Symposium, Proceedings of the 10th IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid 2010)*, Melbourne, Australia, May 17-20, 2010.

10. Kyong Hoon Kim, **Anton Beloglazov**, and Rajkumar Buyya, "Power-Aware Provisioning of Cloud Resources for Real-time Services," *Proceedings of the 7th International Workshop on Middleware for Grids, Clouds and e-Science (MGC 2009)*, Urbana Champaign, Illinois, USA: ACM, 2009.

11. **Anton Beloglazov** and Sergey Piskunov, "An Algorithm for Two-Level Scheduling of Parallel Jobs," *Proceedings of the All-Russian Science Conference of Young Scientists "Science. Technologies. Innovations."*, Part 1, Novosibirsk, Russia, December 6-9, 2007, pp. 164-168.

12. **Anton Beloglazov** and Sergey Piskunov, "A System for Remote Execution of Simulation Programs on Multicomputers," *Works of ICMaMG SB RAS, Series of Computer Science*, Number 7, Novosibirsk, Russia, 2007, pp. 181-186.

Technical Reports (2)

13. **Anton Beloglazov** and Rajkumar Buyya, "OpenStack Neat: A Framework for Dynamic Consolidation of Virtual Machines in OpenStack Clouds – A Blueprint," *Technical Report CLOUDS-TR-2012-4*, Cloud Computing and Distributed Systems Laboratory, The University of Melbourne, August 14, 2012.

14. **Anton Beloglazov**, Sareh Fotuhi Piraghaj, Mohammed Alrokayan, and Rajkumar Buyya, "Deploying OpenStack on CentOS Using the KVM Hypervisor and GlusterFS Distributed File System," *Technical Report CLOUDS-TR-2012-3*, Cloud Computing and Distributed Systems Laboratory, The University of Melbourne, August 14, 2012.

LANGUAGES
- English – fluent
- Russian – native speaker

REFERENCES   Available upon request