

# Soramichi Akiyama, Ph.D.

Assistant Professor (JP: 助教), Department of Creative Informatics,  
Graduate School of Information Science and Technology, The University of Tokyo

## + Short Bio

I received my Ph.D. from Department of Creative Informatics, The University of Tokyo in 2015, after obtaining a B.Eng. from Kyoto University in 2010. Since June 2018, I have been an assistant professor at Department of Creative Informatics, The University of Tokyo. Before that, I experienced an internship in Microsoft Research and then worked for National Institute of Advanced Industrial Science and Technology (AIST) and Nippon Telegraph and Telephone (NTT) as a researcher. My research interest centers on how to efficiently execute large scale workloads in the AI and HPC fields with as little programmer effort as possible, by leveraging knowledge of operating systems, virtualization techniques, memory systems, and performance analysis.

## + General Info

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Web <http://www.soramichi.jp/>

Date of Birth July 16, 1987

Research Interest Operating Systems, Virtualization Techniques, Memory Systems, Performance Analysis

Languages Japanese (native), English (very fluent)

## + Working Experiences

2018/06 – Today **Assistant Professor**, Department of Creative Informatics, The University of Tokyo, Japan

2015/11 – 2018/05 **Researcher**, Artificial Intelligence Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan *\*I was a postdoc for a month, then worked as a researcher*

2015/04 – 2015/10 **Researcher**, Software Innovation Center, Nippon Telegraph and Telephone (NTT), Japan

2013/05 – 2013/08 **Research Intern**, Microsoft Research, Redmond, WA, US

2011/07 – 2011/08 **Intern**, Information Technology Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan

## + Education

2012/04 - 2015/03 Ph.D., Department of Creative Informatics, The University of Tokyo, Japan

Thesis: "Reducing Energy Consumption of Data Centers by Improving Virtual Machine Live Migration" (Supervisor: Prof. Shinichi Honiden)

2010/04 - 2012/03 M.Sc., Department of Creative Informatics, The University of Tokyo, Japan

2006/04 - 2010/03 B.Eng., School of Informatics and Mathematical Science, Kyoto University, Japan

## + Academic Services

Program Committee Member 38th IEEE International Symposium on Reliable Distributed Systems (SRDS'19)

Program Co-Chair The 7th IEEE Non-Volatile Memory Systems and Application Symposium (NVMSA'18)

Publicity Chair for Asia Region The European Conference on Computer Systems (EuroSys'18)

Publicity Co-Chair 37th IEEE International Symposium on Reliable Distributed Systems (SRDS'18)

Program Committee Member IEEE 12th International Symposium on Embedded Multicore/Many-core Systems-on-Chip (MCSoc'18), Track 8: Operating Systems Platforms for Real-Time Embedded Applications

Committee Member Special Interest Group on Operating Systems, Information Processing Society of Japan (2017/04 -)

External Reviewers IEEE Trans. on Cloud Computing (2017, 2016, 2015), IEICE Trans. on Information and Systems (2018), IEICE Trans. on Communications (2018, 2017), NVMSA'17, eScience'17

## + Awards and Honors

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- 2018/08 Computer Science Research Award for Young Scientists, Information Processing Society of Japan
- 2015/06 Endorsement to my Ph.D. thesis by IPSJ Special Interest Group on Operating Systems
- 2015/03 Dean's Award, Graduate School of Information Science and Technology, The University of Tokyo
- 2013/04 - 2015/03 Research Fellowship for Young Scientists, Japan Society for the Promotion of Science (JSPS)
- 2012/07 Computer Science Research Award for Young Scientists, Information Processing Society of Japan
- 2011/12 Best Paper Award, 23rd Computer Systems Symposium (ComSys'11)
- 2011/12 Best Student Poster Award, 23rd Computer Systems Symposium (ComSys'11)

## + Grants

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- 2018/10 - 2020/03 ACT-I, Strategic Basic Research Programs, Japan Science and Technology Agency, 3000 K JPY
- 2013/04 - 2015/03 Grant-in-Aid for JSPS Research Fellow, Japan Society for the Promotion of Science, 2000 K JPY

## + Refereed Publications

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- [IPDPSW'18] [S. Akiyama](#), T. Hirofuchi, R. Takano: "Diagnosing Performance Fluctuations of High-throughput Software for Multi-core CPUs", 32nd IEEE International Parallel and Distributed Processing Symposium Workshops, pp. 1293 – 1302, 2018.
- [SFMA'18] S. Hamada, [S. Akiyama](#), M. Namiki: "Reactive NaN Repair for Applying Approximate Memory to Numerical Applications", The 8th Workshop on Systems for Multi-core and Heterogeneous Architectures , pp. 1 – 6, 2018. *\*Co-located with EuroSys'18*
- [NVMSA'17] A. Koshiba, T. Hirofuchi, [S. Akiyama](#), R. Takano, M. Namiki: "Towards Write-back Aware Software Emulator for Non-Volatile Memory", The 6th IEEE Non-Volatile Memory Systems and Applications Symposium, pp. 1 – 6, 2017.
- [ROSS'17] [S. Akiyama](#), T. Hirofuchi: "Quantitative Evaluation of Intel PEBS Overhead for Online System-Noise Analysis", 7th International Workshop on Runtime and Operating Systems for Supercomputers, pp. 3:1 – 3:8, 2017. *\*Co-located with HPDC'17*
- [IEICE Trans] [S. Akiyama](#), T. Hirofuchi, R. Takano, S. Honiden: "Fast Live Migration for IO-Intensive VMs with Parallel and Adaptive Transfer of Page Cache via SAN", IEICE Transactions on Information and Systems, Vol. E99-D, No. 12, pp. 3024 – 3034, 2016.
- [CloudCom'16] [S. Akiyama](#), T. Hirofuchi, H. Ogawa: "Performance Prediction of Memory Access Intensive Apps with Delay Insertion: A Vision", 8th IEEE International Conference on Cloud Computing Technology and Science, pp. 492 – 496, 2016.
- [EuroSys'16] A. Newell, G. Kliot, I. Menache, A. Gopalan, [S. Akiyama](#), M. Silberstein: "Optimizing Distributed Actor Systems for Dynamic Interactive Services", The European Conference on Computer Systems, pp. 38:1 – 38:15, 2016. *\*Cited more than 10 times*
- [CloudCom'14] [S. Akiyama](#), T. Hirofuchi, S. Honiden: "Evaluating Impact of Live Migration on Data Center Energy Saving", 6th IEEE International Conference on Cloud Computing Technology and Science, pp. 759 – 762, 2014.
- [IEEE CLOUD'14] [S. Akiyama](#), T. Hirofuchi, R. Takano, S. Honiden: "Fast Live Migration with Small IO Performance Penalty by Exploiting SAN in Parallel", The 2014 IEEE 7th International Conference on Cloud Computing, pp. 40 – 47, 2014.
- [CCGrid'13] [S. Akiyama](#), T. Hirofuchi, R. Takano, S. Honiden: "Fast Wide Area Live Migration with a Low Overhead Through Page Cache Teleportation", The 13th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, pp. 78 – 82, 2013. *\*Cited more than 10 times*
- [IEEE CLOUD'12] [S. Akiyama](#), T. Hirofuchi, R. Takano, S. Honiden: "MiyakoDori: A Memory Reusing Mechanism for Dynamic VM Consolidation", The 2012 IEEE 5th International Conference on Cloud Computing, pp. 606 – 613, 2012. *\*Cited more than 40 times*

## + Talks in Community Events

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- [ContainerCon'15] [S. Akiyama](#): "Goplane: Open Source BUM-less Networking for Large Scale Docker Deployment", ContainerCon 2015
- [LinuxCon Japan'14] [S. Akiyama](#): "Fast Live Migration for Data-intensive VMs by Exploiting Storage Area Network in Datacenter", LinuxCon Japan 2014
- [LinuxCon Japan'12] [S. Akiyama](#): "Acceleration of Virtual Machine Live Migration on QEMU/KVM by Reusing VM Memory", LinuxCon Japan 2012