Kento Sato

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*Team Leader, High Performance Big
Data Research Team*

Short Bio

Kento Sato is a team leader in the Center for Computational Science at RIKEN (RIKEN R-CCS). His research area is distributed systems and parallel computing, particularly in High Performance Computing (HPC). Major focuses of his research are artificial intelligence, machine learning and deep learning in HPC, application reproducibility (MPI reproducibility, and Validation), scalable fault tolerance (Scalable checkpoint/restart, Fault tolerant MPI, Resilient system design), and I/O optimization (NVRAM, Burst buffer, and Big data), co-designing and cloud computing. He received his Ph.D. in the Dept. of Mathematical & Computing Sciences at Tokyo Tech in 2014, his M.S. in the Dept. of Mathematical & Computing Sciences at Tokyo Tech in 2010, and his B.S. in the Dept. of Information Science at Tokyo Tech in 2008.

EDUCATION

Mar., 2014 **Ph.D. in Science**, *Department of Mathematical and Computing*, Tokyo Institute of Technology, *Tokyo, Japan*.

Mar., 2010 **Master of Science**, *Department of Mathematical and Computing*, Tokyo Institute of Technology, *Tokyo, Japan*.

Mar., 2008 **Bachelor of Science**, *Department of Information Science*, Tokyo Institute of Technology, *Tokyo, Japan*.
- Graduated top of the department

WORK EXPERIENCE

May, 2018 **Invited Senior Researcher (Category 5 Employee)**, *RWBC-OIL*, National Institute of Advanced Industrial Science and Technology (AIST), *Tokyo, Japan*.

Nov., 2017 - **Invited Senior Researcher (Category 5 Employee)**, *RWBC-OIL*, National Insti-
Jan., 2018 tute of Advanced Industrial Science and Technology (AIST), *Tokyo, Japan*.

Sep., 2017 - **Computer Scientist**, *Center for Applied Scientific Computing*, Lawrence Livermore
present National Laboratory, *CA, USA*.

Sep., 2014 - **Postdoctoral Researcher**, *Center for Applied Scientific Computing*, Lawrence Liv-
Sep., 2017 ermore National Laboratory, *CA, USA*.
- PRUNER project (Providing Reproducibility on Ubiquitously Non-deterministic Environments and Runs)
- Extreme Scale Resilience project

Apr., 2014 - **Postdoctoral Researcher**, *Global Scientific Information and Computing Center*,
Aug., 2014 Tokyo Institute of Technology, *Tokyo, Japan*.
- Extreme Scale Resilience project

Apr., 2012 - Mar., 2014	**JSPS research fellow**, *DC2*, JSPS (Japan Society for the Promotion of Science), *Tokyo, Japan*. ○ I/O optimization in cluster, cluster and grid environments
July, 2013 - Oct., 2013	**Research Intern**, *Center for Applied Scientific Computing*, Lawrence Livermore National Laboratory, *CA, USA*. ○ Developed a Fault tolerant Messaging Interface(FMI); ○ Developed an I/O interface(IBIO) and a resiliency model for burst buffer
Aug., 2012 - Nov., 2012	**Research Intern**, *Center for Applied Scientific Computing*, Lawrence Livermore National Laboratory, *CA, USA*. ○ Developed a Fault tolerant Messaging Interface(FMI)
Aug., 2011 - Nov., 2011	**Research Intern**, *Center for Applied Scientific Computing*, Lawrence Livermore National Laboratory, *CA, USA*. ○ Developed an asynchronous checkpointing system
Oct., 2010 - Mar., 2011	**Research Staff**, *Global Scientific Information and Computing Center*, Tokyo Institute of Technology, *Tokyo, Japan*. ○ I/O optimization in grid environments
Apr., 2010 - Aug., 2010	**Associate**, *Equity Operation*, J.P.Morgan Securities Japan Co., Ltd., *Tokyo, Japan*. ○ Trading system monitoring ○ FIX (Financial Information Exchange) system log analysis ○ Release of algorithm trading programs ○ In-house user service
Oct., 2006 - Jan., 2008	**Business Intern**, *Equity Research*, Deutsche Securities Inc., *Tokyo, Japan*. ○ Developed a financial chart viewer library and a web interface to SQL databases

PROFESSIONAL ACTIVITIES

2020	HPC Asia 2020 (International Conference on High Performance Computing in Asia-Pacific Region), *Track Chair (in Programming Models and Systems Software)*
2019	ACM/IEEE SC (Supercomputing Conference), *BoF Committee*
2019	ICPP 2019 (International Conference on Parallel Processing 2019), *Technical Program Committee*
2019	ICS 2019 (International Conference on Supercomputing), *Technical Program Committee*
2019	ACM International Conference on Computing Frontiers (CF), *Program Co-Chairs*
2019	R-WoNC'19 (Riken International Workshop on Neuromorphic Computing), *Publicity Co-Chairs*
2019	HPC Asia 2019 (International Conference on High Performance Computing in Asia-Pacific Region), *Technical Program Committee*
2018	ACM/IEEE SC (Supercomputing Conference), *Posters Committee*
2018	ACM/IEEE SC (Supercomputing Conference) workshop: The joint International Workshop on Parallel Data Storage & Data Intensive Scalable Computing Systems (PDSW-DISCS), *Program Committee*
2018	IEEE Cluster, *Poster Committee*

2018	IEEE Transactions on Parallel and Distributed Systems (TPDS-2018-02-0076), *Reviewer*
2018	HPC Asia (International Conference on High Performance Computing in Asia-Pacific Region), *Technical Program Committee*
2018	HPC Asia (International Conference on High Performance Computing in Asia-Pacific Region), *Technical Poster Committee*
2017	ACM/IEEE SC (Supercomputing Conference), *Posters Committee*
2017	ACM/IEEE SC (Supercomputing Conference), *BoF Committee*
2017	ACM/IEEE SC (Supercomputing Conference) workshop: The joint International Workshop on Parallel Data Storage & Data Intensive Scalable Computing Systems (PDSW-DISCS), *Program Committee*
2017	ACM/IEEE SC (Supercomputing Conference) workshop: The first International Workshop on Software Correctness for HPC Applications (Correctnes2017), *Program Committee*
2017	IEEE Cluster, *Proceedings Chair*
2017	IEEE Cluster, *Technical Program Committee*
2017	IEEE Cluster workshop: The 3rd International Workshop on Fault Tolerant Systems (FTS2017), *Technical Program Committee*
2017	ICPP (International Conference on Parallel Processing), *Program Committee Members*
2016	IEEE Cluster, *Technical Program Committee*
2016	IEEE/ACM CCGrid, *Technical Program Committee*
2016	IEEE Cluster workshop: The 2nd International Workshop on Fault Tolerant Systems (FTS2016), *Technical Program Committee*
2015	IEEE Cluster, *Technical Program Committee*
2015	IEEE Cluster workshop: The 1st International Workshop on Fault Tolerant Systems (FTS2015), *Technical Program Committee*
2014	IEEE Transactions on Parallel and Distributed Systems (TPDS-2014-01-0069), *Reviewer*
2014	Concurrency and Computation: Practice and Experience (CPE-14-0353), *Reviewer*
2013	IEEE Transactions on Parallel and Distributed Systems (Journal), *Reviewer*
2013	Parallel Computing (Journal), Reviewer

━━━ AWARDS & SCHOLARSHIP

Jun., 2018	Best poster award in ISC18 on "HuronFS: Hierarchical, User-level and On-demand Burst Buffer File System"
Nov., 2017	R&D 100 Award Finalist on "PRUNERS Toolset"
Nov., 2017	Best poster finalist in SC17 on "A Simulation-Based Analysis on the Configuration of the Burst Buffer"

Nov., 2017	Best poster finalist in SC17 on "Towards Capturing Nondeterminism Motifs in HPC Applications"
Mar., 2017	Best poster award at the Computation Directorate March 2017 Postdoctoral Poster Symposium in LLNL
Feb., 2015	Seiichi Tejima Doctoral Dissertation Award (平成26年度手島精一記念研究賞授与式情報学関係部門) on "Design and Implementation for Optimal Checkpoint/Restart"
Mar., 2014	IEEE/ACM CCGrid2014 Best Paper Award
Apr., 2012	Japanese Society for the Promotion of Science (JSPS) scholarship for two years, (Research fund: $10k/year)
Mar., 2008	Graduated top of the Department of Information Science, Tokyo Institute of Technology, Awarded

GRADUATE ADVISOR

Satoshi Matsuoka, Tokyo Institute of Technology