Sang-Woo Jun

32-G836, Stata Center, MIT
Cambridge, MA 02139
wjun@csail.mit.edu
http://people.csail.mit.edu/wjun

EDUCATION	**Massachusetts Institute of Technology**	2013–Present

Massachusetts Institute of Technology 2013–Present
Ph.D. in Electrical Engineering & Computer Science
- Expected to finish Summer, 2018
- Advisor: **Arvind**

Massachusetts Institute of Technology 2011–2013
M.S. in Electrical Engineering & Computer Science
- Thesis: Scalable Multi-Access Flash Store for Big Data Analytics
- Advisor: **Arvind**

Seoul National University 2004–2011
B.S. in Computer Science and Engineering

RESEARCH INTERESTS

Hardware Acceleration:
- Application-specific hardware acceleration using FPGA
- Programming system, debugging, and libraries
- Hardware acceleration in the cloud

Flash Storage:
- Out-of-core analytic systems to reduce cost while maintaining performance
- Distributed flash storage with in-storage accelerators
- Operating system support for fast storage

PROFESSIONSL EXPERIENCE

Oracle Inc, Big Data Discovery, Cambridge, MA 2016
Summer Intern

Nexon Inc, Maple Story development team, Seoul, Korea 2005–2007
Game Server/Client Software Engineer, Client Security Engineer

PUBLICATIONS

"Using accelerated flash storage for external graph analytics," 2018
Sang-Woo Jun, Andy Wright, Sizhuo Zhang, Shuotao Xu, Arvind
(Under Review) International Symposium on Computer Architecture (**ISCA**)

"BlueCache: A Scalable Distributed Flash-based Key-value Store," [1] 2017
Shuotao Xu, Sungjin Lee, **Sang-Woo Jun**, Ming Liu, Jamey Hicks, Arvind,
International Conference on Very Large Data Bases (**VLDB**)

"Terabyte Sort on FPGA-Accelerated Flash Storage," 2017
Sang-Woo Jun, Shuotao Xu, Arvind,
Field-Programmable Custom Computing Machines (**FCCM**)

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[1]**Media coverage:** MIT News, Inside Science, etc.

"BlueDBM: Distributed Flash Storage for Big Data Analytics," 2016
Sang-Woo Jun, Ming Liu, Sungjin Lee, Jamey Hicks, John Ankcorn, Myron King, Shuotao Xu, Arvind,
ACM Transactions on Computer Systems (**TOCS**)

"Application-Managed Flash" 2016
Sungjin Lee, Ming Liu, **Sangwoo Jun**, Shuotao Xu, Jihong Kim,
File and Storage Technologies (**FAST**)

"minFlash: A Minimalistic Clustered Flash Array," 2016
Ming Liu, **Sang-Woo Jun**, Sungjin Lee, Jamey Hicks, Arvind,
Design, Automation and Test in Europe (**DATE**)

"Large-scale high-dimensional nearest neighbor search using Flash memory with in-store processing," 2015
Sang-Woo Jun, Chanwoo Chung, Arvind,
International Conference on Reconfigurable Computing and FPGAs (**ReConFig**)

"A Transport-Layer Network for Distributed FPGA Platforms," 2015
Sang-Woo Jun, Ming Liu, Shuotao Xu, Arvind,
International Conference on Field Programmable Logic and Applications (**FPL**)

"BlueDBM: An Appliance for Big Data Analytics," [2] 2015
Sang-Woo Jun, Ming Liu, Sungjin Lee, Jamey Hicks, John Ankcorn, Myron King, Shuotao Xu, Arvind,
International Symposium on Computer Architecture (**ISCA**)

"Scalable Multi-Access Flash Store for Big Data Analytics,", 2014
Sang-Woo Jun, Ming Liu, Kermin Fleming, Arvind,
International Symposium on Field-Programmable Gate Arrays (**FPGA**)

"ZIP-IO: Architecture for Application-Specific Compression of Big Data," 2012
Sang-Woo Jun, Kermin Fleming, Michael Adler, Joel Emer,
International Conference on Field Programmable Technology (**FPT**)

TEACHING EXPERIENCE	**Teaching Assistant**	Fall 2012

6.s195 Computer Architecture Laboratory
Department of Electrical Engineering and Computer Science, MIT, Cambridge, USA
- One of two TAs developing in-class activities and programming lab assignments.
- Weekly recitations, special lectures and mentored 18 students for final projects.
- Graded student programming assignments.

BOOK CHAPTER	**Affordable mongo graph analytics using hardware acceleratead flash storage**,	2018

in *Managing Heterogeneous Data and Polystore Databases*,
edited by Vijay Gadepally, Sam Madden and and Michael Stonebraker
(In progress)

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[2]**Media coverage:** MIT News, Engadget, Enterprise Tech, The Next Platform, etc.

SCHOLARSHIPS AND GRANTS	**MIT-Spain La Caxia Foundation** Seed fund for collaboration with Barcelona Supercomputing Center	2017
	Kwanjeong Educational Foundation Scholarship Tuition, Kwanjeong Educational Foundation, Korea	2011–2016
	TOEFL Scholarship ETS (Educational Testing Service), USA	2010
	National Scholarship for Science and Engineering Full Tuition, Aid Foundation, Korean Government	2004–2010

SKILLSET

Programming Skills
- FPGA accelerator development: Bluespec, Verilog
- System software development: Device driver, File system
- Scalable analytics: Hadoop, Spark, GraphLab, Accumulo

Languages: Fluent in Korean and English