Andre S. Yoon

Contact Information

Memory Solutions Lab, Samsung Electronics Co., Ltd.
DSR 16-0, Hwaseong, Kyong-Gi, South Korea

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Research Interests

Large-scale data analysis and modeling, High energy physics, Computational methods and system architecture

Education

Massachusetts Institute of Technology, MA, USA — 2006 – 2012

Ph.D. in Physics
Advisor: Prof. Wit Busza
Dissertation title:
Study of High Transverse Momentum Charged Particle Suppression in Heavy Ion Collisions at LHC

University of Illinois at Urbana-Champaign, IL, USA — 2002 – 2005

B.A., Physics and Mathematics
Early graduation with High distinction in Physics

Professional Experience

Samsung Electronics Co., Ltd, Hwaseong, Kyong-Gi, South Korea

Senior Research Scientist and Engineer — 07/2012 – Present
Alternative military service (07/2012 – 07/2015)

Massachusetts Institute of Technology, MA, USA

Graduate Research Assistant — 09/2006 - 06/2012

Honors and Awards

Researcher of the Month, "For the contribution toward the feasibility study of In-Storage Compute capability inside SSD", Memory Solutions Lab, Samsung Electronics, 2015

Outstanding Contribution Award, "For the successful completion of an advanced R&D project", Samsung Electronics, 2015

The 30 innovative ideas with the highest potential, 2nd Samsung Group-wide Creativity Competition, Samsung Group, 2013

Graduation with High Distinction in Physics, University of Illinois at Urbana Champaign, 2005

Travel and Lodging Award for Excellence in Undergraduate Research, APS conference, American Physical Society (APS), 2004

Deans List, University of Illinois at Urbana Champaign, 2003, 2004, 2005

Computer Skills

Languages: C/C++ and Python

Analysis and visualization: ROOT, R, NumPy, SciPy, Matplotlib, Seaborn, and Scikit-learn

Database and distributed system: MySQL, Hadoop, and Spark

Benchmarking suits: TPC-C, TPC-H, HiBench, and IOmeter.

Teaching Experience

Summer Instructor, Hanyoung Foreign Language High School 06/2006 – 08/2006

Invited Lecturer, Gwacheon Foreign Language High School 05/2006 – 05/2006

Publications

B. Gu, A.S. Yoon, D.-H. Bae, et al., "Biscuit: A Framework for Near-Data Processing of Big Data Workloads", to appear in Proceedings of the 43rd International Symposium on Computer Architectures, $ISCA$ 2016.

I. Jo, D.-H. Bae, A.S. Yoon, et al., "YourSQL: A High-Performance Database System Leveraging In-Storage Computing", (Submitted to 42nd International Conference on Very Large Database, $VLDB$ 2016).

Y. Ki, et al. "In-Storage Computing: Ultimate Solution for Accelerating I/O Intensive Applications", in Proceedings of Flash Memory Summit, 2015

CMS Collaboration (*as a lead analyzer*), "Study of high-p_T charged particle suppression in PbPb compared to pp collisions at $\sqrt{s_{NN}} = 2.76$ TeV, *Eur. Phys. J. C* (2012) 72:1945

A.S. Yoon for the CMS collaboration, "Centrality and p_T dependence of charged particle R_{AA} in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV", *J.Phys.* G38 124116 (2011)

CMS Collaboration (*as a lead analyzer*), "Charged particle transverse momentum spectra in pp collisions at 0.9 and 7 TeV and interpolated spectra at 2.76 TeV", $JHEP$ 08 (2011) 086

CMS Collaboration,"Observation and studies of jet quenching in PbPb collisions at 2.76 TeV", *Phys. Rev.C* 84, 024906 (2011)

F. Arleo, D. d'Enterria, A.S. Yoon, "Single-inclusive production of large-pT charged particles in hadronic collisions at TeV energies and perturbative QCD predictions", $JHEP$ 06 (2010) 035

A.S. Yoon, E .Wenger, G. Roland, "Convoluting jet spectra with fragmentation functions: a cross-check of the charged particle p_T spectrum", $arXiv$:1003.5928

CMS Collaboration, "Transverse momentum and pseudorapidity distributions of charged hadrons in pp collisions at $\sqrt{s} = 0.9$ and 2.36 TeV", $JHEP$ 02 (2010) 041

CMS Collaboration, "Transverse-momentum and pseudorapidity distributions of charged hadrons in pp collisions at $\sqrt{s} = 7$ TeV", *Phys Rev Lett* 105 (2010) 022002

Y. Chen, V. Chetluru, Y.J. Lee, C. Loizides, C. Roland, G. Roland, M.B. Tonjes, Y. Yilmaz, A.S. Yoon, "Study of photon-tagged jet events in high-energy heavy ion collisions with CMS", *Eur. Phys. J. C*4 (2009) 61:649-658

L. Agostino et al. ,"Commissioning of the CMS High Level Trigger", 2009 JINST 4 P10005

Seminars and Presentations

Seminar at the Multidisciplinary club of scientists and engineers, CKB, Seoul, South Korea, November, 2014, "Physics of GPS"

Invited lecture for the annual field engineer training session, Samsung Electronics, Memory Division, August 2013, "Introduction to Flash Translation Layer"

Invited talk for Heavy Ion Meeting (HIM), Jeonju, South Korea, October 2012, "Jet Quenching and R_{AA}: Experiment"

Invited talk at Q2C center, Seoul National University, Seoul, Korea, August 2011, “”Measurement of jet quenching in single-inclusive production of large momentum charged particles in PbPb collisions at the LHC

Invited talk at the Nuclear Laboratory, Korea University, Seoul, Korea, August 2011, “Measurement of R_{AA} in PbPb collisions at the LHC with CMS detector

Invited talk at the Nuclear Laboratory, Yonsei University, Seoul, August 2011, “Measurement of R_{AA} in PbPb collisions at the LHC with CMS detector

Invited talk for Korean Teachers Program at CERN, Geneva, Switzerland, August 07–12, “Heavy Ion Physics with ALICE and CMS at LHC”

Talk for High-p_T Probes of High-Density QCD at the LHC, Ecole Polytechnique, Palaiseau, France, May 30–June 01, 2011, “R_{AA} in CMS”

Parallel talk for XXII International Conference on Ultrarelativistic Nucleus-Nucleus Collisions (Quark Matter), Annecy, France, May 23–28, 2011, “Centrality and transverse momentum dependence of the nuclear modification of charged particle spectra in PbPb collisions at 2.76 TeV from CMS”

Poster presentation for the site-visit of NSF, University of Illinois at Urbana-Champaign, IL, 2005, “Test of charge symmetry breaking via W-production at PHENIX”

Poster presentation for the 2004 Fall Meeting of the Nuclear Physics in Chicago, IL, 2004, “Resistive plate counters for the PHENIX muon trigger upgrade”

Patents

U.S. Patent (filed), I. Jo, A.S. Yoon, et al. “Method for Searching Data From Storage Device”

Korea Patent (filed), I. Jo, A.S. Yoon, et al. “Method for Searching Data From Storage Device”

U.S. Patent (filed), B. Gu, et al. “Operating Method of Computing Device Comprising Storage Device Including Nonvolatile Memory Device, Buffer, and Controller”,

Korea Patent (filed), B. Gu, et al. “Operating Method of Computing Device Comprising Storage Device Including Nonvolatile Memory Device, Buffer, and Controller”

Reference

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