

# Andre S. Yoon

---

CONTACT INFORMATION	Big Data Tech. Lab, SK Telecom Co., Ltd. SKT Corporate R&D Center, Kyong-Gi, South Korea	<i>Mobile:</i> (+82)10-4140-1312 <i>E-mail:</i> Qravity@gmail.com
RESEARCH INTERESTS	Large-scale data analysis and modeling, Applied machine learning, Computational methods and system architecture, High energy physics	
EDUCATION	<b>Massachusetts Institute of Technology</b> , MA, USA Ph.D. in Physics Advisor: Prof. Wit Busza Dissertation title: Study of High Transverse Momentum Charged Particle Suppression in Heavy Ion Collisions at LHC  <b>University of Illinois at Urbana-Champaign</b> , IL, USA B.A., Physics and Mathematics Early graduation with High distinction in Physics	2006 – 2012       2002 – 2005
PROFESSIONAL EXPERIENCE	<b>SK Telecom Co., Ltd</b> , Bundang-Gu, Kyong-Gi, South Korea <i>Principal Data Scientist</i>  <b>Samsung Electronics Co., Ltd</b> , Hwaseong, Kyong-Gi, South Korea <i>Senior Research Scientist and Engineer</i> <i>Alternative military service (07/2012 – 07/2015)</i>  <b>Massachusetts Institute of Technology</b> , MA, USA <i>Graduate Research Assistant</i>	06/2016 – Present   07/2012 – 05/2016  09/2006 - 06/2012
HONORS AND AWARDS	Excellence Award, “For the successful global R&D collaboration in the area of industrial machine learning”, Solution R&D Center, SK Telecom, 2017  First Penguin Award, “For the recognition of taking risks in pursuing an advanced R&D project”, Memory Division, Samsung Electronics, 2016  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, 2 <sup>nd</sup> 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++, Python, and Scala

Analysis and visualization: Keras, Scikit-learn, NumPy, SciPy and Matplotlib

Database and distributed system: MySQL, Hadoop and Spark

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

TEACHING *Summer Instructor*, Hanyoung Foreign Language High School

06/2006 – 08/2006

EXPERIENCE

*Invited Lecturer*, Gwacheon Foreign Language High School

05/2006 – 05/2006

PUBLICATIONS

A.S. Yoon, et al., “Semi-supervised Learning with Deep Generative Models for Asset Failure Prediction”, 2<sup>nd</sup> ACM SIGKDD Workshop on Machine Learning for Prognostics and Health Management, *KDD* 2017.

I. Jo, D.-h. Bae, A.S. Yoon, et al., “YourSQL: A High-Performance Database System Leveraging In-Storage Computing, to appear in Proceedings of the 42<sup>nd</sup> International Conference on Very Large Data Bases, *VLDB* 2016.

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 43<sup>rd</sup> 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 42<sup>nd</sup> 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. G*38 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- $p_T$  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

Talk for the 2<sup>nd</sup> ACM SIGKDD Workshop on Machine Learning for Prognostics and Health Management, Halifax, Nova scotia - Canada, August, 2017, “Semi-supervised Learning with Deep Generative Models for Asset Failure Prediction”

Seminar at the bi-monthly tech-talk, Bundang, South Korea, June, 2017, “High-precision Machine Failure Prediction with Deep Neural Networks and Their Ensemble”

Seminar at the bi-monthly tech-talk, Bundang, South Korea, August, 2016, “Fast and Scalable Algorithm for Large-scale Matrix Computations in Spark”

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

I. Jo, A.S. Yoon, et al. “Method for Searching Data From Storage Device”, 2016, U.S. Patent Application No. 15/131,490

B. Gu, et al. “Operating Method of Computing Device Comprising Storage Device Including Non-volatile Memory Device, Buffer, and Controller”, 2016, U.S. Patent Application No. US 15/156,855

I. Jo, A.S. Yoon, et al. “Method for Searching Data From Storage Device”, 2015, Korean Patent No. 1020150113396

B. Gu, et al. “Operating Method of Computing Device Comprising Storage Device Including Non-volatile Memory Device, Buffer, and Controller”, 2015, Korean Patent No. 1020170019557

REFERENCE

Prof. Wit Busza  
Email: busza@mit.edu  
Phone: (617) 253-7586  
Office: 24-404  
MIT, Cambridge  
MA, USA

Prof. Bolek Wyslouch  
Email: wyslouch@mit.edu  
Phone: (617) 253-7800  
Office: 26-505  
MIT, Cambridge  
MA, USA

Prof. Brian J. Kim  
Email: swjkhkim@snu.ac.kr  
Phone: 82(2) 880-8823  
SK Building 58-224  
SNU, Gwanak-gu  
Seoul, South Korea