

# Soonwook Hwang

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Homepage: <https://hwang2006.github.io>  
GitHub: <https://github.com/hwang2006>

## EDUCATION

<b>Ph.D., Computer Science, The University of Southern California</b>	<b>08/2003</b>
Thesis: <i>Grid Workflow: A Flexible Framework for Fault Tolerance in the Grid</i>	
Advisor: Prof. Carl Kesselman	
<b>M.S., Computer Science, Seoul National University, Korea</b>	<b>02/1995</b>
<b>B.S., Mathematics, Seoul National University, Korea</b>	<b>02/1990</b>

## CURRENT POSITIONS

### Senior Principal Researcher

National Supercomputing Center  
Korea Institute of Science and Technology Information (KISTI)

### Chair

SIG on High Performance Computing (SIGHPC)  
Korean Institute of Information Scientists and Engineers (KIISE)

### Vice President

Korean Society for Computational Science and Engineering (KSCSE)

## RESEARCH INTERESTS

Artificial Intelligence, Large Language Models, Distributed Deep Learning, Big Data Platform, Cloud Computing, Large-scale High Throughput Computing, Grid Computing, Fault Tolerance in Grid Environments, High-level Grid Programming Tools, Workflow Management Systems, Open Grid Services Architecture (OGSA), Web Services

## RESEARCH EXPERIENCE

<b>Computer Scientist &amp; Formal Director General, KISTI</b>	<b>05/2006 – Present</b>
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- Engaging in several Supercomputing/Grid/Cloud-related Research and Development Projects
- Leading the design and development of the HTCaaS (HTC as a Service) Project
- Leading the development of the AMGA Metadata Catalogue Software
- Leading the MoHA (MTC on HAdoop) Project

<b>Professor, University of Science and Technology (UST)</b>	<b>03/2007 – 02/2023</b>
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<b>Visiting Scholar, NERSC/Lawrence Berkeley National Laboratory</b>	<b>08/2017 – 07/2018</b>
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- Working on the DAS (Data Analytics Service) Project at NERSC

<b>Research Staff, National Institute of Informatics, Japan</b>	<b>11/2003 – 02/2006</b>
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- Serving a consulting and architecting role in developing end-user tools and Problem Solving Environment (PSE) in Japan's National Grid Project called NAREGI.

<b>Research Assistant, USC Information Sciences Institute</b>	<b>06/1997 – 08/2003</b>
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- Designed and implemented a generic Failure Detection Service (FDS) for the Grid
- Developed and implemented a Grid workflow system (Grid-WFS), integrated FDS into Grid-WFS, designed XML Workflow Process Definition Language, and incorporated diverse failure recovery strategies including retrying, replication, checkpointing, alternative tasks, and user-defined exception handling
- Participated in developing Globus GARA/QoS components, and implemented the network bandwidth reservation (RSVP) component
- Designed and implemented Globus Realtime Transport Protocol (RTP) transform module for Nexus

**Research Assistant, USC Center for Software Engineering** **01/1996 - 05/1997**

- Teamed up with other graduate students and implemented Java USC COCOMOII, a software cost estimation model developed by Dr. Barry Boehm

**Research Assistant, Seoul National University, Korea** **08/1993 - 01/1995**

- Collaborated with developers to design engineering database system for CAD tools

#### **UNIX SYSTEM ADMINISTRATION EXPERIENCE**

- **Computer Science Graduate Organization (CSGO) Lab Manager, USC** **05/1996 - 05/1997**

## **JOURNAL ARTICLES**

Geant4 simulation model of electromagnetic processes in oriented crystals for accelerator physics, Alexei Sytov, Laura Bandiera, Kihyeon Cho, Soonwook Hwang, Giuseppe Antonio Pablo Cirrone, Luciano Pandola, Susanna Guatelli, Anatoly Rosenfeld, Viktor Haurylavets, Victor Tikhomirov, Vladimir Ivanchenko, *Journal of Korean Physics Society*, 83, 132-139 (2023)

Multi-Jet Event classification with Convolution Neural Network at Large Scale, Jiwoong Kim, Chang-Seong Moon, Hokyong Nam, Junghwan Goh, Dongsung Bae, Changhyun Yoo, Sungwon Kim, Tongil Kim, Hwidong Yoo, Soonwook Hwang, Kihyeon Cho, Jaegyeon Hahm, Hunjoo Myung, Minsik Kim, Taeyoung Hong, *Journal of Physics Conference Series*, 2023

Large-Scale Learning for Multi-Jet Event Classification, Jiwoong Kim, Chang-Seong Moon, Hokyong Nam, Junghwan Goh, Dongsung Bae, Changhyun Yoo, Sungwon Kim, Tongil Kim, Hwidong Yoo, Soonwook Hwang, Kihyeon Cho, Jaegyeon Hahm, Hunjoo Myung, Minsik Kim, Taeyoung Hong, *arXiv preprint arXiv:2207.11710*, 2022

Resource Profiling and Performance Modeling for Distributed Scientific Computing Environment, MA Hossain, S. Hwang, JS KIM, *Applied Sciences*, 2022 12(9), 4797

An empirical study of I/O separation for burst buffer in HPC systems, Donghun Koo, Jaehwan Lee, Jialin Liu, Eun-Kyu Byun, Jae-Hyuck Kwak, Glenn K Lockwood, Soonwook Hwang, Katie Antypas, Kesheng Wu, Hyeonsang Eom, *Journal of Parallel and Distributed Computing*, Vol 148, pp96-108, 2021

Exploiting the Volatility of Large-scale Shared Distributed Computing Resources, Md Azam Hossain, Baseem Al-athwari, Jik-soo Kim, Soonwook Hwang, International conference on smart computing and cyber security: strategic foresight, security challenges and innovation, November, 2020

On the Role of Message Broker Middleware for Many-task Computing on a Big Data Platform, Cao Ngoc Nguyen, Jaehwan Lee, Soonwook Hwang, Jik-Soo Kim, *Cluster Computing Journal*, Vol 22, Issue 1, pp 2527-2540, 2019

Towards Effective Scheduling Policies for Many-task Applications: Practice and Experience Based on HTCaaS, Jik-soo Kim, Bui Quang, Seungwoo Rho, Seoyong Kim, Sangwan Kim, Vincent Breton and Soonwook Hwang, *Concurrency and Computation: Practice and Experience*, Vol 29, Issue 21, November 2017

Design Criteria of Korean LTER Data Platform Model for Full Life-cycle Data Management, Taesang Huh, Geunchul Park, Sunil Ahn, Soonwook Hwang, Hoekyung Jung, *International Journal of Applied Engineering Research*, Vol 13, Issue 3, pp336-342, 2017

Making a Case for the On-demand Multiple Distributed Message Queue System in a Hadoop Cluster, Cao Ngoc Nguyen, Jik-Soo Kim and Soonwook Hwang, *Cluster Computing Journal*, Vol 20, Issue 3, pp 2095-2106, September 2017

Adaptive Hybrid Storage Systems Leveraging SSDs and HDDs in HPC Cloud Environments, Donghun Koo, Jik-Soo Kim, Soonwook Hwang, Hyeonsang Eom, and Jaehwan Lee, *Cluster Computing Journal*, Vol 20, Issue 3, pp 2119-2131, September 2017

On the Role of Application and Resource Characterizations in Heterogeneous Distributed Computing Systems, Eunji Hwang, Seontae Kim, Jik-Soo Kim, Soonwook Hwang and Joung-ri Choi, *Cluster Computing Journal*, Vol. 19, Issue 4, pp2225-2240, December 2016.

Exploiting Resource profiling Mechanism for Large-scale Scientific Computation on Grids, Azam Hossain, Jik-Soo Kim, Cao N. Nguyen and Soonwook Hwang, *Cluster Computing Journal*, Vol 19, Issue 3, pp1527-1539, September 2016.

Resource Allocation Policies for Loosely Coupled Applications in Heterogeneous Computing Systems, Eunji Hwang, Suntae Kim, Tae-kyung Yoo, Jik-Soo Kim, Soonwook Hwang and Young-ri Choi, *IEEE Transactions on Parallel and Distributed Systems*, July 2015

Towards Effective Science and Cloud Provisioning for a Large-scale High-Throughput Computing, S. Kim, J.-S. Kim, S. Hwang, and Y. Kim, *Cluster Computing Journal*, Vol. 17, No. 4, December 2014.

Implementation and Performance Evaluation of WS-DAIR interface for AMGA, Sunil Ahn, Taesang Huh, Geunchul Park, Namgyu Kim, Soonwook Hwang, *International Journal of Software Engineering & Application*, Vol. 7, No. 4, July 2013-12-18

Towards a Next Generation Distributed Middleware System for Many-Task Computing, Jik Soo Kim, Sangwan Kim, SeokKyoo Kim, Seoyoung Kim, Seungwoo Noh, Ok-Hwan Byeon, Soonwook Hwang, *International Journal of Software Engineering & Application*, Vol. 7, No. 4, July 2013

Performance Evaluation of the Federated and Replicated AMGA Deployment for Belle II Experiment, Jae-Hyunk Kwak, Soonwook Hwang, Geunchul Park, Taesang Huh, *Journal of Next Generation Information Technology*, Vol. 4, No. 8, October 2013

High-Throughput Computing over Distributed Supercomputing Infrastructures, Jik Soo Kim, SeokKyoo Kim, Sangwan Kim, Seungwoo Kim, Seoyoung Kim, Soonwook Hwang, *Journal of Next Generation Information Technology*, Vol. 4, No. 8, October 2013

Gustav: CPU Accounting for Small-sized Grid Infrastructure, Reberto Barbera, Emidio Giorgio, Gianni M. Ricciardi, Soonwook Hwang, *Int. J. Grid and Utility Computing*, Vol. 3, No. 2, August, 2012

The Embedment of Metadata System at Grid Farms at the Belle II, Sunil Ahn, et al, *Journal of the Korean Physical Society*, Vol. 59, No. 4, October 2011

Discovery of Novel Inhibitors for Human Intestinal Maltase: Virtual Screening in Wisdom Environment and in vitro Evaluation, Thanh Hanh Nguyen, et al, *Biotechnology Letters*, Vol. 33, No. 11, July 2011

Cost-Aware Dynamic Resource Allocation in Distributed Computing Infrastructures, Gianni M. Riciardi and Soonwook Hwang, *International Journal of Contents*, Vol. 55, No. 5, June 2011

Virtual Screening Identification of Novel Severe Acute Respiratory syndrome 3C-like Protease Inhibitors and in vitro Confirmation, Thanh Hanh Nguyen, et al, *Bioorganic & Medicinal Chemistry Letters*, May 2011. Large-scale Deployment of Two-Color QCD Simulations on the Grid using Ganga, Soonwook Hwang, Hangi Kim and Seyong Kim, *Computer Physics Communications*, Vol. 182, No. 1, January 2011

The advanced data searching system with AMGA at the Belle II experiment, JungHyun Kim, et al, *Computer Physics Communications*, Vol. 182, No. 1, January 2011

Design of the Advanced Metadata Service System with AMGA for the Belle II Experiment, Sunil Ahn, et al, *Journal of Korean Physics Society*, Vol. 57, No. 4, October 2010

Performance Analysis and Optimization of AMGA for the Large-scale Virtual Screening, Sunil Ahn, Namgyu Kim, Sehoon Lee, Dukyun Kim, Soonwook Hwang, Birger Koblitz, Vincent Breton, Sangyong Han, *Software Practice & Experience*, Vol. 39, No. 12, 2009

Agent Controlled Loop Scheduling in Grid Environment and its Applications to Protein Folding Optimization, Byungsang Kim, MinJoong Jeong, Soonwook Hwang, Chan-Hyun Youn, *Journal of Korean Physics Society*, Vol. 55, No. 5, November 2009.

A Flexible Framework for Fault Tolerance in the Grid, Soonwook Hwang and Carl Kesselman, *Highlights of the Twelfth Symposium on the High Performance Distributed Computing Journal of Grid Computing*, Volume 1, No. 3, 2003, pp 251-272. 2004

## BOOK CHAPTERS

Hee-Kyoung Kang, Soonwook Hwang, Dowon Kim, Vincent Breton and Doman Kim, In Vitro Test for Potential Inhibitors of Plasmeprin II and Anti-malaria Agents, Simon C. Lin and Eric Yen. Eds. *Managed Grids and Cloud Systems in the Asia-Pacific Research Community*, Springer, 2010

## CONFERENCE PROCEEDINGS

Exploiting the Volatility of Large-scale Shared Distributed Computing Resources, Md Azam Hossain, Baseem Al-athwari, Jik-soo Kim, Soonwook Hwang, *International conference on smart computing and cyber security: strategic foresight, security challenges and innovation*, Singapore, November 2020

Accelerating a burst buffer via user-level I/O isolation, Jaehyun Han, Donghun Koo, Glenn K Lockwood, Jaehwan Lee, Hyeonsang Eom, Soonwook Hwang, 2017 IEEE International Conference on Cluster Computing (CLUSTER), Hawaii, September 2017 (**Best Paper**)

Accelerating Genome Sequence Alignment on Hadoop on Lustre Environment, Eun-Kyu Byun, Junehawk Lee, Seok Jong Yu, Jae-Hyuck Kwak, Soonwook Hwang, 2017 IEEE 13<sup>th</sup> International Conference on e-Science, Auckland, New Zealand, October 2017

A Case Study of Leveraging High-Throughput Distributed Message Queue System for Many-Task Computing on Hadoop, Cao N Nguyen, Jik-soo Kim, Jaehwan Lee, Soonwook Hwang, *Foundation and Application Self\* Systems (FAS\*W)*, 2017 IEEE 2<sup>nd</sup> International Workshops, Tucson, AZ, September 2017

Accelerating a Burst Buffer via User-level I/O Isolation, Jaehyun Han, Donghun Koo, Glenn K Lcokwood, Hyeonsang Eom, Soonwook Hwang, 2017 IEEE International Conference on Cluster Computing (CLUSTER), Honolulu HI, September 2017

MOHA: Many-Task Computing meets the Big Data Platform, Jik-soo Kim, Cao N Nguyen and Soonwook Hwang, *the IEEE 12<sup>th</sup> International Conference on eScience (eScience 2016)*, Baltimore, Maryland, October 2016

KOHA: Building a Kafka-based Distributed Queue System on the Fly in a Hadoop Cluster, Cao N Nguyen, Jik-Soo Kim and Soonwook Hwang, *the 4<sup>th</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'16)*, Augsburg, Germany, September 2016

Utilizing Progressive File Layout Leveraging SSDs in HPC Cloud Environments, Donghun Koo, Jik-Soo Kim, Soonwook Hwang, Hyeonsang Eom and Jaehwan Lee, *the 4<sup>th</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'16)*, Augsburg, Germany, September 2016

SCOUT: A Monitor & Profiler of Grid Resources for Large-scale Scientific Computing, Md Azam Hossain, Hieu Trong Vu, Jik-soo Kim and Soonwook Hwang, *the 3<sup>rd</sup> ional Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'15)*, September 2015

A Job Dispatch Optimization Method on Cluster and Cloud for Large-scale High Throughput Computing Service, Jieun Choi, Seoyoung Kim, Theodora Adufu, Soonwook Hwang and Yoonhee Kim, *the 3<sup>rd</sup> rnational Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'15)*, September 2015

Performance Analysis of Loosely Coupled Applications in Heterogeneous Distributed Computing Systems, Eunji Hwang, Seontae Kim, Tea-Kyung Yoo, Jik-soo Kim, Soonwook Hwang and Young-ri Choi, *the 3<sup>rd</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'15)*, September 2015

Platform and Co-runner Affinities for Many-Task Applications in Distributed Computing Platforms, Suntae Kim, Eunji Hwang, Tae-Kyung Yoo, Jik-soo Kim, Soonwook Hwang and Young-ri Choi, 15<sup>th</sup> IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2015), May 2015

A Comparative Analysis of Scheduling Mechanisms for Virtual Screening Workflow in a Shared Resource Environment, Bui The Quang, Jik-Soo Kim, Seungwoo Rho, Seoyoung Kim, Soonwook Hwang, Emmanuel Medernach and Vincent Breton 2015 Workshop on Clusters, Clouds and Grids for Life Sciences (CCGrid-Life 2015), May 2015

HTCaaS: Leveraging Distributed Supercomputing Infrastructures for Large-Scale Scientific Computing, Jik-Soo Kim, Seungwoo Rho, Seoyoung Kim, Sangwan Kim, Seokkyoo Kim, and Soonwook Hwang, 6<sup>th</sup> Workshop on Many-Task Computing on Clouds, Grids, and Supercomputers (MTAGS 2013), Denver, USA, November 2013

An allocation and provisioning model of science cloud for high throughput computing application, Seoyoung Kim, Jik-soo Kim, Soonwook Hwang, Yoonhee Kim, *The ACM Cloud and Autonomic Computing Conference(CAC2013)*, Miami, USA, August 2013-12-18

HTCaaS: Efficient and Simplified Large-Scale Scientific Computing over Supercomputers, Grids and Cloud, Jik Soo Kim, Seungwoo Noh, Seoyoung Kim, Sangwan Kim, SeokKyoo Kim, Soonwook Hwang, *The ACM Cloud and Autonomic Computing Conference(CAC2013)*, Miami, USA, August 2013-12-18

HTCaaS: A Large-Scale High Throughput Computing by Leveraging Grids, Supercomputers and Cloud, *Supercomputing Conference (SC12)*, Salt Lake City, USA, November, 2012

A Grid-enabled Problem Solving Environment for in-silico Screening in Drug Discovery, Soonwook Hwnag, Sehoon Lee, Sangdo Lee, Jincheol Kim, Vincent Breton, Jean Salzemann, Hanh Thi Thanh Nguyen and Doman Kim, *2010 International Conference on Computer Sciences and Convergence Information Technology*, Seoul, Korea, December 2010.

Gustav: a Lightweight Approach to CPU Accounting in Distributed Systems, Roberto Barbera, Emidio Giorgio, Soonwook Hwang, Gianni M. Ricciardi, *Fifth International Conference on P2P, Parallel, Grid, Cloud and Internet Computing*, Fukuoka, Japan, November 2010

Large-scale Deployment of two-color QCD simulations on the Grid using Ganga, Soonwook Hwang, Hangi Kim and Seyong Kim, *Conference on Computational Physics 2009*, Taiwan, 2009

The Monitoring System for AMGA Distribution, Namgyu Kim, Yusang Kim, Sunil Ahn and Soonwook Hwang, *ICCC2009*, Hanoi, December, 2009

A Grid-enabled Problem Solving Environment for Supporting Collaborative Aerodynamics Engineering Process, Junehawk Lee, Dukyun Nam, Soonwook Hwang and Ok-hwan Byeon, *the 4<sup>th</sup> IEEE International Conference on e-Science*, Indianapolis, USA, December 2008.

e-Science Workbench: an Approach to Build Domain-specific Problem Solving Environments, Dongsoo Han and Soonwook Hwang, *the 4<sup>th</sup> IEEE International Conference on e-Science*, Indianapolis, USA, December 2008.

DrugScreener-G: Towards an Intergrated Environment for Grid-enabled Large-scale Virtual Screening and Drug Discovery, Jincheol B. Kim, Nguyen Dang Nhan, Sehoon Lee, Soonwook Hwang and Vincent Breton, *the 4<sup>th</sup> IEEE International Conference on e-Science*, Indianapolis, USA, December 2008.

Improvement of Task Retrieval Performance using AMGA in a Large-scale Virtual Screening, Sunil Ahn, Namgyu Kim, Sehoon Lee, Dukyun Nam, Birger Koblitz, Vincent Breton and Sangyong Han, *NCM2008*, Korea, August 2008.

Research Process Support with Organization Flow in e-Science, Dukyun Nam, June Hwak Lee, Soonwook Hwang, ByungSang Kim, Young-Kyun Suh, *The 2<sup>nd</sup> IEEE International Workshop on e-Activity*, Portland, Oregon, USA, May 14, 2008.

A Super-Metascheduler-based Approach for Integrating Multiple Heterogeneous Grids, Hyung-Jun Choi, Eunsung Kim, Yoonki Lee, Heon Y. Yoem, Dukyun Nam and Soonwook Hwang, *ICACT2008*, February, Korea, 2008

Application Parameter Description Scheme for Multiple Job Generation in Problem Solving Environment, ByungSang Kim, Dukyun Nam, Young-Kyun Suh, June Hwak Lee, Kumwon Cho, Soonwook Hwang, *PSE workshop, the 3<sup>rd</sup> IEEE Conference on e-Scinece and Grid Computing*, India, December, 2007

Optimization Data Acquisition and Replication in Data Grid, Nhan Nguyen, Soonwook Hwang, *HPC Asia 2007*, Seoul, September, 2007

Improving Job Scheduling Performance with Dynamic Replication Strategy in Data Grids, Nhan Nguyen Dang, Soonwook Hwang, Sang Boem Lim, *The 9<sup>th</sup> International Conference on Parallel Computing Technology (PaCT-2007)*, Pereslavl-Zalessky Russia, Sep 3-7, 2007, LNCS 4671-0194

Improvement of Data Grid's Performance by Combining Job Scheduling with Dynamic Replication Strategy, Nhan Nguyen Dang, Soonwook Hwang, Sang Boem Lim, *The 6th International conference on grid and cooperative computing (GCC2007)*, Urumchi, China, Aug 16-18, 2007, IEEE-CS

Parametric Study Service for Large-scale Scientific Simulation on the Grid, Byungsang Kim, Soonwook Hwang, Minjoong Jeong, Chayoung Kim, Kumwon Cho, *The 9<sup>th</sup> IEEE International Conference on Advanced Communication Technology*, Phonnix Park, Korea, February 12 -14, 2007

Update on NAREGI WP3: Realization of an Easy-to-Use Grid Application Development Environment  
Soonwook Hwang  
Korea-Japan Grid Symposium 2006, Tokyo, January 25, 2006

NAREGI WP3: Bridging Gaps Between Grid End-users and Grid Middleware by Providing Easy-to-use Grid Application Development Environments  
Soonwook Hwang  
*The 1<sup>st</sup> Korea-Japan Grid Symposium 2004*, December 1-2, 2004.

NAREGI PSE: Problem Solving Environment based on Grid Services  
Hitohide Usami, Soonwook Hwang, Yutaka Miyahara, Motohiro Yamada, Masahide Fujisaki, Yoshikazu Hayase, and Shegeo Kawata  
*PSE Workshop & Grid Seminal in Oita*, October 28-29, 2004

Grid Workflow: A Flexible Failure Handling Framework for the Grid,  
Soonwook Hwang and Carl Kesselman,  
*Proceedings of the 12th IEEE International Symposium on High Performance Distributed Computing (HPDC-12)*, Seattle, June 2003. **(Best Papers)**

A Generic Failure Detection Service for the Grid,  
Soonwook Hwang and Carl Kesselman, *Technical Report ISI-TR-568, USC Information Sciences Institute*, Feb, 2003

The Quality of Service Component for the Globus Metacomputing System,  
C. Lee, C. Kesselman, J. Stepanek, R. Lindell, S. Hwang, B. Scott Michel, J. Bannister, I. Foster and A. Roy, *Proceedings of the Sixth International Workshop on Quality of Service*, 1998

## **SELECTED SOFTWARE DEVELOPMENT PROJECT**

Leading the development of the High Throughput as a Service (HTCaaS)  
<https://htcaas-e90544c543f1.herokuapp.com>

Leading and deploying the AMGA Metadata Catalog Service as an International collaboration project  
<https://amga.web.cern.ch>

## **AWARDS & HONORS**

September 2017, IEEE International Conference on Cluster Computing (CLUSTER), Best Papers

June 2003, Proceedings of the 12th IEEE International Symposium on High Performance Distributed Computing (HPDC-12), Best Papers

## **INVITED TALKS**

Embracing the Exascale Computing Era, Korea Software Congress 2020 (KSC2020)

Grid/e-Science Activities in KISTI, International Symposium and Grids and Clouds 2015, Taiwan

Grid/e-Science Activities in KISTI, International Symposium and Grids and Clouds 2014, Taiwan

Grid/e-Science Activities in KISTI, International Symposium and Grids and Clouds 2013, Taiwan

Grid/e-Science Activities in KISTI, International Symposium and Grids and Clouds 2012, Taiwan

Grids and Clouds Activities in KISTI, International Symposium and Grids and Clouds 2011, Taiwan

Status of KISTI Tier2 Center for ALICE, APCTP 2010 LHC Physics Workshop at Korea

Grid Activities in KISTI, International Symposium on Grid Computing 2010, Taiwan

Large-scale Deployment of two-color QCD on the FKPPL VO using Ganga, xQCD Workshop 2009

Grid R&D Activities in KISTI, International Symposium on Grid Computing 2009, Taiwan

The Development of e-Science Enabling Technologies and Applications on EGEE Grid Infrastructure, ICCIT 2008

Cyberinfrastructure in Korea: Status Report, TGCC 2006

## **PROFESSIONAL ACTIVITIES**

### **Organizer**

2023 HPC Summer Workshop, Shilla Hotel, Seoul, August 18

2022 HPC Summer Workshop, Hoam Faculty House, Seoul, July 21

The IEEE 5<sup>th</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'17)

The IEEE 4<sup>th</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'16)



The IEEE 3<sup>rd</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'15)

The IEEE 2<sup>nd</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'14)

The IEEE 1<sup>st</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'13), Miami, Florida, USA – August 5, 2013

The 1<sup>st</sup> KIISE-KOCSEA HPC SIG Joint Workshop, Salt Lake City, USA – November 14, 2012

2010 Summer Training Course on Geant4, GATE and Grid Computing (2010)

2<sup>nd</sup> FKPL Workshop (2010)

2008 International Summer School on e-Science and Grid Computing

Geant4 Workshop in Korea (2009)

### **General Chairs**

International Conference on High Performance Computing in Asia-Pacific Region, Jeju Island, Korea, January 20-22, 2021

20<sup>th</sup> International Workshop on Advanced Computing and Analysis Techniques in Physics Research (ACAT 2020), Daejeon, Korea, September 8-12, 2020

### **Program Chairs**

The IEEE 5<sup>th</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'17)

The IEEE 4<sup>th</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'16)

The IEEE 3<sup>rd</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'15)

The IEEE 2<sup>nd</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'14)

The IEEE 1<sup>st</sup> International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'13)

International Conference on Computer Sciences and Convergence Information Technology (Since 2008)

PSE: Computer Assisted Problem Solving Environment (2010)

Innovative and Collaborative Problem Solving Environments (PSE) in Distributed Resources: PSE Workshop08 (2008)

Global Grid Form (GGF) Open Grid Services Architecture (OGSA) Resource Selection Service (RSS)  
Working Group (2005 – 2006 )

### **Steering Committees**

International Conference on High Performance Computing in Asia-Pacific Region (HPC Asia) (Since 2016)

France-Korea Particle Physics and e-Science Laboratory (FKPPL) (2016 ~ 2021)

IEEE International Conference on Cloud and Autonomic Computing (ICCAC) (2014 ~ 2020)

### **Program Committees**

2021 ACM/IEEE IEEE International Conference on High Performance Computing, Networking, Storage and Analysis (SC'21), St. Louis, Program Committee

2019 ACM/IEEE IEEE International Conference on High Performance Computing, Networking, Storage and Analysis (SC'19), Denver, Workshop Committee

2018 ACM/IEEE IEEE International Conference on High Performance Computing, Networking, Storage and Analysis (SC'18), Dallas, Birds of a Feather Reviewing Committee

2016 ACM/IEEE International Conference on High Performance Computing, Networking, Storage and Analysis (SC'16), Utah, Workshop Committee

The 15<sup>th</sup> IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2015)

The 19<sup>th</sup> IEEE International Conference on Parallel and Distributed Systems (ICPADS 2013)

The International Symposium on Grids and Clouds (ISGC) (Since 2011)

The 7<sup>th</sup> Korea-Japan e-Science Symposium (2010)

PSE Workshop 2010 in Japan (2010)

The 16<sup>th</sup> Pacific Rim Applications and Grid Middleware Assembly (PRAGMA) Workshop (2009)

International PSE Workshop 2007 (2007)

### **Journal Editorial Boards**

Springer Cluster Computing Special Issue, Guest Editor (2013 ~ 2018)

### **Former Graduate Students**

Inayat Ali (Ph.D.)

*Thesis: Efficient Content Retrieval in Named Data Networking-Based Highly Dynamic Wireless Environment (2022)*

Nguyen Ngoc Cao (Ph.D.)

*Thesis: Efficient Execution Framework to Support Many-Task Computing on Big Data Platform (2019)*

Md. Azam Hossain (Ph.D.)

*Thesis: Effective Resource Profiling and Modeling Mechanism for Large-scale Unreliable Distributed Computing Environment (2017)*

Vu Trong Hieu (M.S.)

*Thesis: Virtual Machine Placement Considering Traffic Cost and Power Consumption in Cloud Data Center (2014)*

Gianni Mario Ricciardi (M.S.)

*Thesis: Cost-Aware Dynamic Resource Allocation in Distributed Computing Infrastructure (2011)*

Nhan Nguyen (M.S.)

*Thesis: Improvement of Data Grid's Performance by Combining Job Scheduling with Dynamic Replication Strategy (2007)*

## Reference

Letters of Recommendation

<https://hwang2006.github.io/recommendation/>