

# CENTRA 3

Smart Cyberinfrastructure for  
Transnational Science

[www.globalcentra.org](http://www.globalcentra.org)

14-16 May, 2018 Tokyo, JAPAN



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14-15 May 2018

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## Venue



## Welcome

It is with great pleasure that we welcome CENTRA members, friends and visitors to the CENTRA 3 Meeting: Smart Cyberinfrastructure for Transnational Science in Tokyo, Japan. This meeting brings together international CENTRA researchers to review ongoing or new collaboration projects that require contributions from researchers and/or cyberinfrastructure from different countries. This is the third meeting following the CENTRA 2 All-Hands Meeting in Gainesville, Florida, and the CENTRA 1 Kickoff meeting in Taipei, Taiwan. CENTRA continues to mature and grow. In particular, we are very happy to welcome our first member from the European Union, INESC TEC from Portugal. We look forward to together coming up with new ideas, demonstrating early prototypes, conceptualizing new projects and advancing science and its applications.

The CENTRA 3 Meeting: Smart Cyberinfrastructure for Transnational Science follows the PRAGMA 34 meeting held at Akihabara, Tokyo from May 10 through 11. The PRAGMA 34 technical program and social activities in the intervening weekend also provide CENTRA attendees with additional opportunities for professional interactions and networking.

CENTRA activities are funded in part by the National Science Foundation (NSF ACI Award 1550126) of the USA, the Ministry of Science and Technology (MOST) of Taiwan, the National Institute of Information and Communications Technologies (NICT) of Japan, and the Institute for Systems and Computer Engineering, Technology and Science (INESC TEC) of Portugal. We are very thankful for the support of all these sponsors.

Once again, welcome to the CENTRA 3 Meeting: Smart Cyberinfrastructure for Transnational Science and to Tokyo, the city of light and hospitality (OMOTENASHI)!



On behalf of the CENTRA Steering Committee,



Shinji Shimojo



Fang-Pang Lin



Rui Oliveira



José Fortes

CENTRA Steering Committee Chair

# CENTRA 3 Meeting: Smart Cyberinfrastructure

## Working Agenda

**Sunday, May 13**

**CENTRA Steering Committee Meeting**

**Monday, May 14**

9:00 AM **Registration and Poster Setup**

9:30 – 10:30 AM **Plenary Flyby Session: Opening Communications**

**Session Chair** Shinji Shimojo

**Welcome remarks:** Dr. Fumihiko Tomita (*Vice President, Member of the Board of Directors, NICT*)

**Introducing NICT Testbeds:** Dr. Hiroaki Harai (*Director General of ICT Testbed Research and Development Promotion Center, NICT*)

**Presentation:** “CENTRA 3: Objectives, Partners and Desired Outcomes,” José Fortes, Fang-Pang Lin, Rui Oliveira and Shinji Shimojo

10:30 – 10:45 AM **Group Photo**

10:45 AM – 12:00 PM **Plenary Dive-in Session: Reports on Ongoing Projects**

**Session Chair** José Fortes

**Project review:** “Dynamically Aggregating Smart Community Sensors, Edge and Cloud Resources with Overlay VPNs,” Renato Figueiredo

**Project review:** “SDN-IP Peering for IoT Data Transmission,” Te-Lung Liu

**Project review:** “IT for Natural Disaster Management & Visualization Alliance,” Jason Haga

**Project review:** “ASEAN IVO: Software Defined System on Disaster Mitigation and Smart Cities,” Jing Yuan Luke

**New CENTRA Member Organization Presentation – KISTI:** Kum Won Cho

12:00 – 1:00 PM **Lunch**

1:10 – 3:40 PM **Plenary Dive-in Session: Reports on Ongoing Projects and Proposed Projects**

**Session Chair** Rui Oliveira

**Project review:** “AirBox: a Participatory Ecosystem for PM2.5 Monitoring,” Ling-Jyh Chen

**Project review:** “Distributed Lifemapper,” Aimee Stewart

**Proposed project:** “Privacy-preserving Cloud Computing for IoT,” INESC TEC and KISTI

**Proposed project:** “Network Congestion Issues in Disaster Scenarios,” Krishna Kant

# for Transnational Science

- 1:10 – 3:40 PM **Proposed project:** “PADE: Precision Agriculture with Drones and Edge,”  
Christopher Stewart  
“Using UAV Images to Monitoring Rice Paddy with Artificial  
Intelligence,” Hui-Ping Tsai et al.
- Proposed project:** “Secure Data Collaboration Using GFFS,” Andrew Grimshaw

3:40 – 4:00 PM **Tea Break and Group Formation for Ongoing and New Projects**

4:00 – 5:00 PM **Catch-a-project-and-group Concurrent Breakout Sessions**

5:00 – 5:10 PM **Walk from AP Tokyo Marunouchi to NICT Otemachi Office**

5:15 – 6:00 PM **Demo Session**

**Session Chair** Eiji Kawai

Demo 1: ASEAN-IVO

Demo 2: An Adaptive Network Testbed based on SDN-IP

Demo 3: SafeDB: Secure Database Processing

Demo 4: An Island Overlay Network (ION) Testbed for Designing and Evaluating  
IoT-era Applications

Demo 5 & 6: to be updated during meeting

6:30 PM **Reception**

(UOMAN DINING: Nihon Seimei Marunouchi Garden Tower B1, 1-1-3 Marunouchi, Chiyoda-ku)

## Tuesday, May 15

9:00 – 9:15 AM **Plenary Presentation “Toward the Global Research Platform,” Nadya Williams**

9:15 – 9:30 AM **Plenary Brief Report back from Each Project**

**Session Chair** Fang-Pang Lin

9:45 AM – 12:00 PM **Catch-a-project-and-group Concurrent Breakout Sessions**  
(10:00 AM – 12:00 PM *Refreshments available*)

12:00 – 1:00 PM **Lunch**

1:30 – 3:00 PM **Planning Session for Each Project - Concurrent Breakout Sessions**  
(2:00 – 3:30 PM *Refreshments available*)

3:30 – 4:30 PM **Plenary Take-away Session**

4:30 – 5:00 PM **Closing Remarks and Announcements for Future CENTRA Events**

5:00 – 6:00 PM **CENTRA Advisory Board and Steering Committee Meeting**

# CENTRA 3 Post-workshop ABCI (by AIST) Visit

Wednesday, May 16 10:00 AM – 4:30 PM

## • Location: Tokyo, Japan

- Venue 1 NICT Otemachi Office  
• KDDI Otemachi Building 16th Floor, 1-8-1 Otemachi, Chiyoda-ku, Tokyo, 100-0004
- Venue 2 ABCI (AIST) in Kashiwanoha, Kashiwa-shi  
• The University of Tokyo Kashiwa Campus

## • Program:

- 10:00 - 11:00 AM ABCI presentation by AIST (Venue 1: NICT Otemachi Office, see p.1)
- 11:00 AM - 1:00 PM Lunch break
- 1:00 - 2:00 PM Move to ABCI in Kashiwanoha on a bus
- 2:00 - 3:00 PM AIST ABCI visit (Venue 2: Kashiwanoha, Kashiwa-shi)
- 3:00 - 4:30 PM Move back to Otemachi on a bus

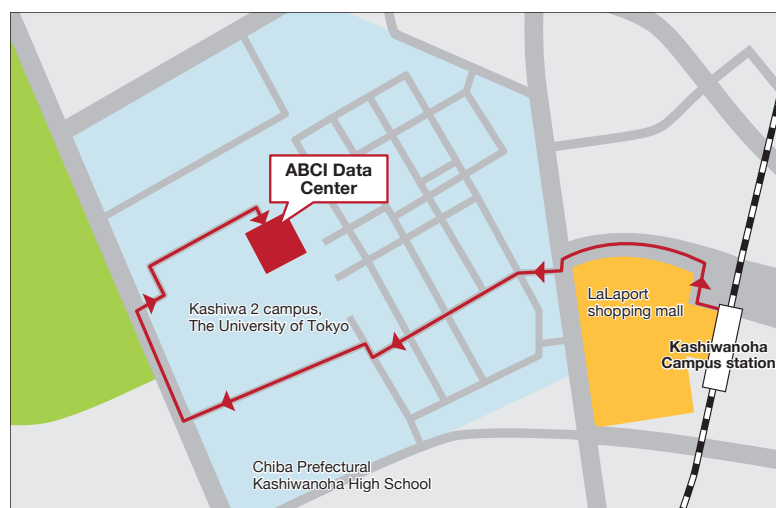
## About ABCI

ABCI is a facility of National Institute of Advanced Industrial Science and Technology (AIST), which stands for **AI Bridging Cloud Infrastructure**.

**ABCI** is an open innovation platform with world-class computing resources of **550 Pflops (HP) / 37P flops (DP)** for AI research and development.

AIST: [http://www.aist.go.jp/index\\_en.html](http://www.aist.go.jp/index_en.html)

## Location



# List of Participants

## Peter Arzberger

Peter Arzberger is the founding Chair of the PRAGMA Steering Committee and a founding member of the GLEON Steering Committee. He is interested in having students engaged in PRAGMA, GLEON and CENTRA activities.



## Corey Baker

Professor Baker is in the Computer Science department at the University of Kentucky where he leads the Network Reconnaissance (NetRecon) Lab. Dr. Baker's research interests are in the area of cyber physical systems, particularly, pragmatic applications and fundamental issues related to real-world resource availability in today's operating systems for D2D communication for IoTs and smart cities.



## Nannapas Banluesombatkul

I worked with Prapaporn Rattanatamrong, Nadya Williams, and Shava Smallen in PRAGMA cloud scheduler project. I implemented part of the backend for web application together with my project partner, Prapansak Kaewlamul (Pogh), who implemented the GUI. I am also one of the winning team members of CENTRA Smart Cities Student Hackathon in Florida, 2017.



## Peter Banzon

Senior Research Scientist, Advanced Science and Technology Institute, Philippines.



## Maxine Brown

Maxine Brown, a member of CENTRA's Advisory Board, has research interests in visualization, collaboration, human-computer interfaces, high-performance computing, and international network infrastructure. As Director of the UIC Electronic Visualization Laboratory, she is responsible for fundraising, project management, documentation, and promotion of its research activities.





## **Bill Chang**

Special Advisor in the Office of Vice President for Research and Innovation, the University of Hawaii System. He served as the Head of East Asia and Pacific at the National Science Foundation and the Director of NSF China Office in Beijing and as the Science Counselor for Basic Science at the U.S. Embassy Beijing. He also served as the Professor of Aquatic Ecology at the University of Michigan.



## **Chalernpol Charnsripinyo**

Chalernpol Charnsripinyo is currently a senior research specialist and head of Internet Innovation Laboratory at National Electronics and Computer Technology Center (NECTEC), Thailand. His research interests include network design, network security, network management, network virtualization, cloud services, Internet of Things, future Internet technology and applications.



## **Ling-Jyh Chen**

Ling-Jyh Chen is the PI of the AirBox project, which is a participatory IoT system for PM2.5 sensing. The project has deployed more than 4500 sensors in more than 35 countries. He is looking for collaboration on IoT, AI, security, and other exciting and related problems.



## **Kum Won Cho**

Dr. Cho is the Vice President of Korea Institute of Science and Technology Information (KISTI). He has also been leading various initiatives at KISTI Supercomputing Center and National Institute of Supercomputing and Networking (NISN).



## **Hsiu-Mei Chou**

Hsiu-Mei Chou is an associate research scientist at National Center for High-performance Computing. Her research is mainly focus on data resources management and sharing. Hsiu-Mei has been working with scientific community such as GLEON (Global Lake Ecological Observatory Network) for building data sharing infrastructure since 2013.



## **Chiao-Ning Chuang**

Student, Institute of Data Science and Engineering, National Chiao Tung University, Taiwan. Research interests: Image Processing; Deep Learning.



**Matthew Collins**

Matthew is the Technical Operations Manager and scientific programmer for Advanced Computing and Information Systems (ACIS) laboratory, University of Florida (UF). He provides for the care and feeding of the technical resources, both human and machine, of the lab. He has previously been a system administrator and web applications developer for the Florida Museum of Natural History.

**Jay Samuel Combinido**

Jay Samuel Combinido received his MS degree in Physics in the University of the Philippines Diliman. His previous works include traffic research and earth science simulations. Currently, he is affiliated with the Advanced Science and Technology Institute doing research on environmental computing and machine learning.

**Dzung Dinh**

Dr. Dzung has over 25 years of experience in ICT R&D, consulting, and training. He works in a number of research areas including network optimization, mobility management, IoT, 5G, and Big Data. Dr. Dzung is a Fulbright Scholar at New York University, USA. He has obtained his Ph.D. from PTIT, Vietnam, the M.E. degree from UTS, Australia, B.E. degree from ONAT, former Soviet Union.

**Renato Figueiredo**

Renato Figueiredo is a Professor at the ECE Department, University of Florida, USA. His interests are in the areas of virtualization, distributed systems, overlay and software-defined networks, cloud and edge computing, as well as applications in support of smart and connected communities.

**José Fortes**

José Fortes is the AT&T Eminent Scholar and Professor of Electrical and Computer Engineering at the University of Florida where he is the Director of the Advanced Computing and Information Systems Laboratory. He is the principal investigator and Steering Committee Chair of the NSF-funded CENTRA project in the USA. His research focuses on the science and applications of smart cyberinfrastructure.

**Koichi Fujinuma**

Koichi FUJINUMA is in charge of planning the implementation of NICT's integrated testbed. Prior to this position, he held several positions within Japanese Government including MIC, MEXT, MOD and Cabinet Office.





## **Masanori Goto**

Masanori Goto works at the National Institute of Information and Communications Technology where he is involved in several networking testbeds.



## **Andrew Grimshaw**

Andrew is the chief designer and architect of Mentat and Legion. In 1999 he co-founded Avaki Corporation, and served as its Chairman and Chief Technical Officer until 2005. In 2003 he won the Frost and Sullivan Technology Innovation Award. Andrew is a member of the Global Grid Forum (GGR) Steering Committee and the Architecture Area Director in the GGF. He has served on the National Partnership for Advanced Computational Infrastructure (NPACI) Executive Committee, the CESDIS Science Council, the Board on Assessment of NIST Programs and many more.. He is the author or co-author of over 50 publications and book chapters.



## **Jason Haga**

Jason Haga is a Senior Research Scientist at AIST. His past interdisciplinary, collaborative research work involved the design and implementation of applications for grid computing environments, tiled display walls, and cultural heritage institutions. Currently, his research interests include immersive visualization technologies for data analytics in a variety of domain sciences.



## **Hiroaki Harai**

Director General at NICT's ICT Testbed R&D Promotion Center. Working in R&D on Future Networks and Optical Networks for more than 20 years.



## **Grace Hong**

Grace is the Research Programs Coordinator at the ACIS Lab, University of Florida. She coordinates various activities, social media outreach, webinars, meetings, membership/partnership development support for the Global CENTRA network ([globalcentra.org](http://globalcentra.org)) and other research administration processes for the ACIS Lab. She has been involved in PRAGMA, PRIME and GLEON activities since 2003.



## **Yu-Chun Hsu**

I am a research assistant at National Chung Hsing University, Taiwan. I am researching on UAV and Agriculture to identify the crop growth stage by machine learning.

**Weicheng Huang**

Research Fellow, National Center for High-performance Computing, Taiwan. My specialty includes parallel processing, grid, cloud, and big data.

**Kohei Ichikawa**

Kohei Ichikawa is an Associate Professor in Nara Institute of Science and Technology, Japan. His past research work involved middleware and applications for Grid, virtualized infrastructures and Software Defined Network testbed. He is currently working on the PRAGMA project, developing an international Software Defined Networking Testbed for use by the PRAGMA researchers.

**Prapansak Kaewlamul**

Prapansak is an engineer at Thomson Reuters Software, Thailand and recently graduated from Thammasat University with B.S. in Computer Science. He co-wrote the second version PRAGMA Cloud Scheduler's new modular Web-based interface. He was part of winning team of the CENTRA Smart Cities Student Hackathon held at University of Florida (UF) in 2017.

**Krishna Kant**

Krishna Kant is a professor of computer science at Temple University, Philadelphia, PA. His research interests include communications for disaster response, smart grid security, IOT configuration and security, data center energy and configuration management, smart logistics for fresh food distribution, and storage systems. He carries 37 years of experience in academia, industry, and government.

**Eiji Kawai**

Eiji Kawai has been conducting research and development of advanced networking technologies as director of Network Testbed R&D Laboratory. He is now interested in deployment of SDN/SDI technologies on large-scale network infrastructure for IoT applications.

**Yoshiyuki Kido**

Yoshiyuki Kido is an Associate Professor of the Cybermedia Center, Osaka University. His research field is computer science with bioscience and his current research interests include visualization, software defined networking, cluster computing and related information technologies. He is a member of IEEE CS and IPSJ.





## **Tae Sung Kim**

Post doctoral researcher at Department of Electrical and Computer Engineering of Seoul National University. Research interest: Video processing, hardware accelerator, SoC design.



## **Grace HuiLan Lee**

Hui-Lan Lee is currently an associate engineer in National Center for High-Performance Computing at National Applied Research Laboratories. She is a team member of the Taiwan Advanced Research and Education Network (TWAREN). Her current research interests including the design and analysis of network architectures, optical networks, IPv6, and software defined networking.



## **Hyuk-Jae Lee**

Professor at Department of Electrical and Computer Engineering of Seoul National University. Research interest: Video processing, parallel computer architecture, SoC design.



## **Ruth Lee**

Ruth Lee is a Director of Center for Computational Science Platform at Korea Institute of Science and Technology Information (KISTI) since 2002. She is also an Adjunct Professor of Department of High Performance Computing at University of Science & Technology of Korea since 2005. Her research interests are Simulation based Cyber-Learning System for computational science and engineering, platform for computational science and engineering and so on.



## **Shu-Wei Lee**

Shu-Wei Lee is a graduate student studying in the Institute of Computer and Communication Engineering of National Cheng Kung University. His current research interests are software-defined networking and network function virtualization.



## **Fang-Pang Lin**

Fang-Pang is based at the National Center for High Performance Computing. He is the division director for Cloud Computing and System Integration. His research interests are in the areas of distributed and parallel computing and numerical methods.

**Ming-Hong Lin**

I am a postgraduate student in Computer Science at National Chiao Tung University, Taiwan. My research interests: Deep Learning, Internet of Things, and Artificial Intelligence.

**Jason Liu**

Jason Liu is an Associate Professor at Florida International University. His current research interests include parallel discrete-event simulation, performance modeling, computer systems, network infrastructures and testbeds, data analytics and machine learning. In particular, his research focuses on designing effective models and developing parallel simulation of large-scale systems.

**Te-Lung Liu**

Dr. Te-Lung Liu works at National Center for High-Performance Computing (NCHC), Taiwan. He is a member of TaiWan Advanced Research and Education Network (TWAREN), with 100G domestic backbone and 20G international network links. Current research activities of TWAREN include SDN, DTN, and cloud networking.

**Yu Shao Liu**

Student from National Chiao Tung University, Taiwan. My research interests: database; image processing.

**Jing Yuan Luke**

Mr LUKE has been with MIMOS for 20+ years. Currently he is leading a team in R&D in areas/issues related to cloud computing, distributed object storage systems as well as deployment and support of such systems. He is also a Co-PI of a ASEAN IVO Project funded by NICT Japan. Research Areas Cloud/Edge/Distributed computing, Distributed Storage System, HPC, Performance Tuning and Benchmarking.

**Saw Zay Maung Maung**

I am a lecturer at the University of Computer Studies, Yangon and now I do my research for Ph.D degree in the areas of deep learning for computer vision and image processing.





## **Khin Than Mya**

I am Prof. Dr. Khin Than Mya from UCSY, Myanmar. I have M.Sc.(Physics), M.A.Sc. (Computer Engineering) and Ph.D(IT). I am very interesting on CENTRA online meeting program. Thank you so much for PRAGMA/CENTRA Japan Meetings 2018. In this program I hope to get new technologies and new projects with you. I have a good opportunity now available for your collaboration.



## **Binh Minh Nguyen**

He received his Ph.D. degree in Applied Informatics from Slovak University of Technology (STU) in Bratislava (Slovakia) in 2013. Currently, he is a lecturer, scientific researcher at Hanoi University of Science and Technology (Vietnam). His research interests include cloud computing, distributed systems, Internet of Things, cryptocurrency, and data analytics.



## **Masato Oguchi**

Masato Oguchi is a professor of Ochanomizu University in Tokyo, Japan. Previously, he was a research fellow in NII and University of Tokyo. His research field includes HPC, middleware, mobile networking, and Big Data analysis.



## **Rui Oliveira**

Rui Oliveira is Associate Professor at University of Minho and member of the board of INESC TEC. His main research contributions have been in the field of fault-tolerant agreement, epidemic algorithms and replicated database systems. He coordinates the H2020 SafeCloud project on secure processing in the Cloud. He serves on the SC of Global CENTRA and the Atlantic Interactions Research Centre.



## **Sola Park**

Master's degree student at Department of Electrical and Computer Engineering of Seoul National University. Research interest: object detection and tracking, YOLO, Autonomous driving.



## **João Paulo**

Dr. João Paulo is currently a Researcher at INESC TEC. He obtained a PhD degree in Computer Science from University of Minho in 2015. His research focuses on large scale distributed systems with an emphasis on storage systems and data management. He has several publications on journals and international conferences, and has participated in various European and national projects.

**José Pereira**

José Pereira is a Senior Researcher at INESC TEC working on dependable distributed systems. He is interested mainly in data management, including parallel and polyglot query processing, database replication, and in group communication, including agreement and gossip-based protocols for large-scale systems. He is also interested in techniques and tools for testing, evaluating, and monitoring.

**Glenn Ricart**

Glenn Ricart is PI for Smart Gigabit Communities working in 25 smart and connected communities to provide dozens of advanced technology applications and services. A key is advanced networking capabilities including low-latency and real-time communications coupled with edge computing capabilities. US Ignite also works with Northeastern U. on Platforms for Advanced Wireless Research (PAWR).

**Myint Myint Sein**

Professor, University of Computer Studies, Yangon

Research Interests: Pattern Recognition, Image Processing, OCR, 3D reconstruction, 3D Image Retrieval, GIS and Android Applications.

**Woojin Seok**

Woojin Seok works for Korea Institute of Science and Technology Information(KISTI), and is the director of Advanced KREONET center. He is a committee member of Future Internet Forum(FIF) Korea and Asia Pacific Network Operation and Management(APNOM). His interesting research areas are ScienceDMZ, Software Defined Infrastructure, IoT Network, and so on.

**Shinji Shimojo**

Shinji Shimojo received the M.E. and Ph.D. degrees from Osaka University in 1983 and 1986, respectively. He has been a Professor with the Cybermedia Center at Osaka University since 1998 and since 2015, he had been the director of the Center.

**João R. Silva**

I work on Research Data Management. I lead the development team of Dendro, a platform that helps researchers describe and share datasets in a clear and reusable way. I work with Triple Stores, SPARQL, Ontologies, metadata standards, and I am passionate for everything related to the Semantic Web. I hold a PhD in Informatics Engineering from the Faculty of Engineering of the University of Porto.





## Shava Smallen

Shava Smallen is a programmer at the San Diego Supercomputer Center at UC San Diego. Her research areas are cloud and distributed computing. She currently works on the international Pacific Rim Application and Grid Middleware Assembly (PRAGMA) project, developing a Cloud test bed scheduler and support tools to enable scientists to run application virtual clusters on PRAGMA cloud resources.



## Aimee Stewart

Aimee Stewart (Kansas University) is the technical lead on the Lifemapper project, an open-source modeling environment that allows researchers to model species distribution or habitat suitability with species occurrence data from biological collections around the world, together with climatological and geological data, and most recently with phylogenetic (evolutionary) data derived from DNA sequencing studies.



## Christopher Stewart

Professor, Computer Science and Engineering at The Ohio State University. My research and outreach demonstrate the power and potential for societal impact of novel, distributed computer systems. I specialize in cloud computing, sustainable computing, hardware and software modeling, autonomic/autonomous systems and, recently, precision agriculture.



## Kensworth Subratie

PhD student at the ACIS Lab, University of Florida. My research interests are distributed storage systems, virtual networks, and software system design within the context of IoT and edge networks. My goal is to identify the computing infrastructure and platform necessary to support next-generation IoT and edge computing applications with their inherent requirements for low latency data access.



## Jyun-Yu Syu

I am a student at National Chiao Tung University. I am interested in Internet, wireless network such as Wi-Fi and 3G, 4G technologies, as well as media streaming and management service.



## Ryousei Takano

He received his Ph.D. degree from Tokyo University of Agriculture and Technology in 2008. He joined AXE, Inc. in 2003. He joined Institute of Advanced Industrial Science and Technology (AIST) in 2008. He is currently a research group leader of AIST. His research interests include operating systems and distributed parallel computing.



**Atsuko Takefusa**

Atsuko Takefusa received her Ph.D. (Sci.) degrees from the Ochanomizu University in 2000. She worked at the Ochanomizu University, the National Institute of Advanced Industrial Science and Technology (AIST), and joined the National Institute of Informatics as an associate professor in 2016. Her research field is parallel and distributed computing including Grid, Cloud and HPC.

**Yoshio Tanaka**

Yoshio Tanaka is the director of Information Technology Research Institute of AIST, Japan. He is a member of PRAGMA steering committee and his research interests include distributed computing and security.

**Naomi Terada**

She is a member of ICT Testbed Research and Development Promotion Center. She currently works on deploying network testbed and SDN testbed. Her current research interests include multimedia streaming and visualization of social data.

**Jelina Tetangco**

Senior Science Research Specialist and Project Manager, the Department of Science and Technology, Advanced Science and Technology Institute (DOST-ASTI), Philippines.

**Fumihiko Tomita**

Dr. Fumihiko “Tom” Tomita is responsible for the leadership in the research strategy in the National Institute of Information and Communications Technology (NICT), Japan. He has been interested in the revolution around data driven Innovation for quality of social life which have a potential to be an entrance to the new social infrastructure for the world sustainable human happiness.

**Hui Ping Tsai**

I am interested in studying vegetation patterns based on remotely sensed data to evaluate long-term natural system response to climate change. In addition, using UAV image for practical agriculture applications combining AI techniques is another research field that I am excited about. Currently Assistant Professor, National Chung Hsing University.





## **Whey-Fone Tsai**

Whey-Fone Tsai is a Senior Research Fellow at NCHC, Taiwan. His recent research interest is Big Data/AI integration for Engineering applications, and offshore wind energy in Taiwan is one of the above applications.



## **Hsin-Hung Tseng**

Graduate student, National Chung Hsing University. Now working on the AI project founded by MOST, Taiwan. Main idea is using RGB+NIR+Thermal camera equipped UAV to monitor the growth of crops, damage after disasters. Our end goal is to provide a platform that allow farmers to upload images to classify the situation of crops, detect the diseases, or estimate crop yield.



## **Pongsakorn U-chupala**

Pongsakorn has recently graduated from Nara Institute of Science and Technology (NAIST) with a Ph.D. in Computer Science. He has been a collaborator and shared administration responsibility for PRAGMA-ENT testbed. He was a member of PRAGMA Student Steering Committee from 2015-2018. Dr. U-chupala is now a software engineer at Sony Corporation, Japan.



## **Wassapon Watanakeesuntorn**

Currently, I am a graduate student at Nara Institute of Science and Technology. I am working on monitoring OpenFlow network and DDoS detection in the OpenFlow network.



## **Yasuhiro Watashiba**

Yasuhiro Watashiba is an Assistant Professor in the Graduate School of Information Science at Nara Institute of Science and Technology, Japan. He received his Ph.D. degrees from Osaka University in 2015. His current research interests include Resource Management on computing environment and related information technologies.



## **Nadya Williams**

Nadya is a specialist in enabling applications and software stacks in integrated environments. Currently Nadya serves as the functional lead in the design, specification and evaluation of software architecture scalable and reusable for current and future environments for use by the NBCR community and a member of PRAMGA cloud infrastructure developers team at University of California at San Diego.

**Can Wu**

I am Can Wu from Computer Network Information Center of the Chinese Academy of Sciences (CNIC, <http://english.cnic.cas.cn/>). My major is High Performance Computing. I am in charge of the optimization of middleware in High Performance Computing Environment now.

**Felix Wu**

Prof. S. Felix Wu is currently a Professor of Computer Science and Associate Dean of Engineering at University of California, Davis. His current research interests include Computational Journalism, Social Computing, and Cyber Security.

**Saneyasu Yamaguchi**

Saneyasu Yamaguchi received his Engineering Doctor's degree (Ph.D.) at The University of Tokyo in 2002. During 2002-2006, he stayed in Institute of Industrial Science, The University of Tokyo to study I/O processing. He now with Kogakuin University. Currently his researches focus on operating systems, virtualized systems, and storage system. He is a member of IEEE, IEICE, and IPSJ.

**Hiroaki Yamanaka**

Hiroaki Yamanaka received M.E. and Ph.D from Osaka University in 2008 and 2011, respectively. From 2011, he is a researcher at Network Testbed R&D Laboratory of National Institute of Information and Communications Technology (NICT). His current research work is focusing on edge computing and SDN.

**Ming-Der Yang**

Professor, National Chung Hsing University. My research interests include image processing, remote sensing, geographic information system, environmental monitoring, and disaster assessment. Recent research efforts have been put on using AI techniques for agriculture applications and developing 3D reconstruction technology for disaster assessment.

**Chih-Wei Yi**

Dr. Chih-Wei Yi received his Ph.D. degree in Computer Science from the Illinois Institute of Technology in 2005. He is currently a Professor with the Department of Computer Science and the Director of the Institute of Network Engineering, National Chiao Tung University. His research focuses on wireless ad hoc and sensor networks, intelligent transportation systems, mobile sensing, and data mining.





## Juan Sebastian Aguirre Zarraonandia

Sebastian is a Master student who has always been engaged with different sectors of electronics and telecommunications. His interests around software defined networks and network functions virtualization has led him to Japan joining Professor Shinji Shimojo in Osaka University. His current research focuses on the implementation of the SDN technology in Wide Area Networks.



## Febus Reidj Guinto Cruz

Febus Reidj G. Cruz is a registered electronics engineer, a senior researcher, and a faculty member of the School of Electrical Electronics and Computer Engineering in Mapua University at Intramuros, Manila, Philippines since 1995 up to present. His research interests include the design, innovation, and development of circuits and systems for different sensor applications.



## Udom Lewlomphaisarl

He received the M.Eng in electrical engineering from Ladkrabang institute of technology, Thailand. Since 1993, he has been a researcher with NECTEC. His research interest is Supervisory Control and Data Acquisition, SCADA.



## Nguyen Quoc Uy

Dr Uy has 5 years of experience in ICT R&D, consulting, and training. He is lecturer and researcher of Post and Telecommunication Institute of Technology (PTIT). IOT in this area can be helpful to collect data and transmit to the host. He currently works in building smart home, smart agriculture system, including Wireless sensor network (WSN), IoT system, Big Data.



## Linh Truong

Dieu-Linh Truong is currently Associate Professor, Deputy head of Department of Data Communications and Computer Networks in School of Information and Communication Technology, Hanoi University of Science and Technology, Vietnam. Her interest is routing problem in computer networks, communication using Free Space Optics, smart applications for environment.



## Chien-Chao Tseng

Chien-Chao Tseng is the Chair of Department of Computer Science, National Chiao Tung University. Hi research expertise includes Heterogeneous Wireless Networks, IoT Networks and Applications, Software Defined Networks, Wireless Internet and Applications, and Embedded OS for Handheld Devices.

**Kanokvate Tungpimolrut**

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