



The First Arts, Culture, New Media, and Entertainment Workshop

EITC-New Media 2011

"New Media in Art, Technology, and Heritage"

Proceedings

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Candidate Program Topics

The workshop is structured around a number of sub-themes that include -but are not limited to, the following topics as they relate to the research and development aspects of New Media in Art, Technology, and Heritage.

The long list is not meant to be all-inclusive. Rather, it should be used to stimulate and encourage other ideas and possibilities.

1 Cloud Computing Technology and Services

- Cloud culture
- Cloud computing architecture
- Infrastructure/software/application/business cloud
- Service-Oriented Architecture (SOA) in cloud computing
- Virtualization of hardware/software resources
- Cloud computing consulting methods
- Design tool for cloud computing
- Maintenance and management of cloud computing
- Cloud applications in vertical industries

2 Transmedia and Technology

- Transmedia theory and design
- Transmedia, art and content
- Transmedia and future computing/IT convergence/creative industry

3 Virtual Reality/Augmented Reality/Mixed Reality (VR/AR/MR)

- Ubiquitous mixed/augmented reality (MR/AR)
- Wearable and mobile mixed/augmented reality (MR/AR)
- Distributed and collaborative mixed/augmented reality (MR/AR)
- Industrial/medical mixed/augmented reality (MR/AR) applications
- Mixed/augmented reality (MR/AR) for entertainment and training
- Interactive, virtual and augmented environments
- Avatars and virtual community
- Robotics and telepresence

4 Virtual Heritage

- Mixed/augmented reality (MR/AR) for cultural heritage
- Computer animation for cultural heritage applications and virtual heritage
- Virtual reality (VR) applications in conservation research and practice
- Intelligent description of cultural heritage content (in multiple languages)
- Novel Internet-based cultural heritage applications
- Encyclopedias in cultural heritage
- Digital libraries and archives
- National digital libraries and aggregators as cross-domain systems
- E-libraries and e-learning in cultural heritage
- Cultural heritage and edutainment
- Knowledge systems for heritage management
- Virtual heritage, virtual tourism, and virtual museum applications (e-museums and e-exhibitions)
- 3D data capture and processing in cultural heritage

- Digital reconstructions and 3D modeling
- Digital media and commodification of cultural heritage
- Digital heritage tools and systems
- The economics of cultural informatics and tourism

5 Media Art and Technology

- Ubiquitous/pervasive media and art
- Media arts and creative technologies
- Computer music
- Interactive and mobile media & art
- Museum art and exhibitions
- Digital storytelling
- Applications of serious gaming technologies
- Affective computing

6 Entertainment and Education

- Mixed/augmented reality (MR/AR) for entertainment
- Education, virtual classroom and virtual collaborative learning
- Social impact, social networking, sound and music
- Social and interactive computing and media
- Mobile entertainment

Workshop Program

▶ 9:00 am - 11:30 am : Registration

▶ 9:30 am - 10:20 am : Opening Session

Chair: **Dr. Rong N. Chang** (張榮), IBM T.J. Watson Research Center

Mr. Carlton Vann

Director, Division for International Business
Office of the Mayor
The City of New York

“Introduction to the National Palace Museum”

Dr. Kung-shin Chou

Director, National Palace Museum
Republic of China (Taiwan)
(國立故宮博物院院長周功鑫博士)

▶ 10:20 am – 11:00 am : Keynote Session

Chair: **Dr. Rong N. Chang** (張榮), IBM T.J. Watson Research Center

Dr. Giovanni Pacifici

Director of Distributed Computing
IBM T.J. Watson Research Center

▶ 11:00 am - 11:15 am : Break

▶ 11:15 am – 12:15 pm : Plenary Session 1: Social Media, Cloud Computing, and Cyber Security

Chair: **Dr. Shu-Ping Chang** (張書平), IBM T.J. Watson Research Center

“Secure Cloud Computing”

Professor Ruby B. Lee

Director, Princeton Architecture Lab for Multimedia and Security (PALMS)
Department of Electrical Engineering
Princeton University
(普林斯頓大學電機系李佩露教授)

“Smarter City Services and Smarter Cloud

Dr. Milind Naphade

Program Director of Smart City Services and Smarter Cloud
IBM T.J. Watson Research Center

▶ 12:15 pm – 1:30 pm : Lunch

► **1:30 pm – 2:30 pm : Plenary Session 2: Emerging Broadband Technology and Multimedia Services**

Chair: **Dr. Jih-Shyr Yih** (易繼實), IBM T.J. Watson Research Center

“Mobile Visual Search and Augmented Reality”

Professor Shih-Fu Chang

Director, Digital Video and Multimedia Lab
Department of Electrical Engineering
Columbia University
(哥倫比亞大學電機系張世富教授)

“Data Center Network Designs”

Professor H. Jonathan Chao

Head, Department of Electrical and Computer Engineering
Polytechnic Institute of NYU
(紐約大學理工學院電機及電腦工程系主任趙鴻翔教授)

► **2:30 pm – 3:30 pm : Plenary Session 3: Media Art, Creative Design, and Cultural Industry Development**

Chair: **Dr. Chiao-Fe Shu** (徐秋風), IBM T.J. Watson Research Center

“Value-added Applications and Marketing Promotion for the Digital Archiving of Arts”

Professor Yung-Cheng Hsieh

Dean, Office of Research and Development
National Taiwan University of Arts
(國立台灣藝術大學研究發展處研發長謝顯丞教授)

“ARTstor: A Digital Image Library for Education and Scholarship”

Dr. William Ying

Chief Information Officer and Vice President of Technology
ARTstor

► **3:30 pm – 3:45 pm : Break**

► **3:45 pm – 5:00 pm : Plenary Session 4: Cloud Computing and the Data Center of the Future**

Chair: **Dr. Zon-Yin Shae** (薛榮銀), IBM T.J. Watson Research Center

“Smarter Public Safety”

Dr. Chiao-Fe Shu

STSM, IBM Research
Chief Technologist, GTS Physical Security Service
IBM T. J. Watson Research Center
(國際商業機器公司華生研究中心徐秋風博士)

“High Performance Computing Cloud”

Dr. Zon-Yin Shae

IBM T.J. Watson Research Center
(國際商業機器公司華生研究中心薛榮銀博士)

► **5:00 pm – 5:45 pm : Plenary Session 5: Open Discussions and Q&A**

Moderators: **Dr. William Ying**, ARTstor & **Dr. Rong Chang**, IBM T. J. Watson Research Center

Panel discussion will be participated by all invited speakers, including:

Professor Shih-Fu Chang, Columbia University

Professor H. Jonathan Chao, Polytechnic Institute of NYU

Dr. Kung-shin Chou, National Palace Museum, ROC (Taiwan)

Professor Yung-Cheng Hsieh, National Taiwan University of Arts

Professor Ruby B. Lee, Princeton University

Dr. Zon-Yin Shae, IBM T.J. Watson Research Center

Dr. Chiao-Fe Shu, IBM T. J. Watson Research Center

Q&A open to all participants

Abstracts and Biographies

Conference Chair

Dr. Rong Chang

Manager of Service Management Environments
IBM T. J. Watson Research Center
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BIOGRAPHY



Dr. Rong Chang (張榮博士) is Manager of Service Management Environments at the IBM T.J. Watson Research Center. He received his Ph.D. degree in computer science and engineering from the University of Michigan at Ann Arbor in 1990 and his B.S. degree in computer engineering with honors from the National Chiao Tung University in Taiwan in 1982. Before joining IBM in 1993, he was with Bell Communications Research (Bellcore) creating advanced personal ubiquitous application services for broadband networks. He has received his ITIL Foundation Certificate in IT Services Management (ITSM). His accomplishments at IBM include completion of a nomination-based Micro MBA Program, one IEEE Best Paper Award and many IBM awards, including two corporate-level Outstanding Technical Achievement Awards and four division-level Accomplishment Awards in the areas of cloud computing, IT infrastructure Healthcheck, SLA management, e-commerce, and monitoring & event management. He is a principal investigator of several IBM cloud computing initiatives, including, among other cloud solutions and offerings, the IBM Common Cloud Reference Architecture, CIO Development-Test Cloud, and SmartCloud Enterprise+. He has chaired IBM Research's Professional Interest Community on Services Computing, an emerging new computer science discipline advocated by ACM and IEEE. He holds 14 patents, and has published more than 40 refereed technical papers at reputable international conferences and journals. He is a member of Eta Kappa Nu and Tau Beta Pi honor societies. In 2011, he is the President of Chinese Institute of Engineers – Greater New York Chapter (CIE-USA/GNYC, the Founding Chapter of CIE-USA), and is on the Managing Committee of Emerging Information and Technology Conference (EITC).

Opening Speech

Mr. Carlton Vann

Director, Division for International Business
Office of the Mayor, the City of New York

BIOGRAPHY

Opening Speech

“Introduction to the National Palace Museum”

Dr. Kung-shin Chou

Director, National Palace Museum
Republic of China (Taiwan)
國立故宮博物院院長周功鑫博士

BIOGRAPHY



Dr. Chou Kung-shin is the director of the National Palace Museum (NPM) in Taipei, Taiwan, where she started her career as a docent and then chief curator of the Exhibition department. During her tenure at the NPM, Dr. Chou organized numerous international exhibitions and initiated educational programs that had made distinguished contributions to Taiwan. In teaching and research, Dr. Chou specializes in Chinese art history and museology, publishing many academic and research papers on these topics. Since 1996, she had taught courses at the Graduate Institute of Library Information and Archive Studies at the National Chengchi University, lecturing on topics in museology, such as museum education, art history, museum management, museum exhibition. Dr. Chou received the Medaille de Chevalier de l'Ordre des Arts et des Lettres by the French Ministry of Culture in 1998. In 2002, she founded the Graduate Institute of Museum Studies at Fu Jen Catholic University and served as its director for six years. The Exhibition she organized in 2007 at the National Dr. Sun Yat-sen Memorial Hall titled *Art and Religion: a Special Exhibition of Italian Paintings of the Golden Age from the 14th to 17th Centuries* earned her a silver medal and a papal blessing certificate from Pope Benedict XVI. Dr. Chou received her Ph.D. in Art History and Archaeology at the University of Paris Sorbonne-Paris IV.

Keynote Speech

Dr. Giovanni Pacifici

Director, Distributed Computing
IBM Thomas J. Watson Research Center
Hawthorne, NY USA

BIOGRAPHY



I joined IBM Research in 1995, where I am currently a Director of Distributed Computing leading a research program on foundation technologies for cloud computing, business process management and decision management. My personal research interests are: (1) virtual machine image repository and library technology that stores and operates on images at file-level granularity providing CVS-like version management, ultra dense storage and scalable operations; (2) virtual machine image creation and composition tools to transform virtual machine images into building blocks and then compose these building blocks into complex application topologies that satisfy user requirements; (3) methodology and algorithms to optimize and manage multiple virtualized resources including CPU, memory, disk space and software license limits, while maintaining the availability and performance of applications with potentially large complex topologies that span multiple virtual machines. These research projects led to the following new IBM products: 1) IBM Workload Deployer; 2) WebSphere Virtual Enterprise; and 3) "Deployment Planning and Automation" feature of Rational Software Architect.

From 1989 to 1995 I was an Associate Research Scientist at the Center for Telecommunications Research at Columbia University where I led several research activities that focused on the design and evaluation of real-time control and monitoring systems for high-speed networks with quality of service guarantees.

In 2001 I served as the Technical Program Co-Chair of the IEEE INFOCOM conference as well as the Technical Program Co-Chair for the Fourth IFIP/IEEE International Conference on Management of Multimedia Networks and Services. In 2006 I was the General Chair of the Second IEEE Workshop on Advanced Architectures and Algorithms for Internet Delivery and Applications.

From 2001 to 2007 I was an editor of the IEEE/ACM Transactions on Networking and from 2000 to 2004 I was an editor of the Elsevier Science's Computer Networks Journal. I served as a guest Editor for two special issues of the IEEE Journal on Selected Areas in Communications (in 1997 and 1999).

I received the *Laurea* in Electrical Engineering and the *Research Doctorate* in Information Science and Telecommunications from the University of Rome *La Sapienza* in 1984 and 1989, respectively. As a student, my research activities focused on the design and performance evaluation of access control protocols for local and metropolitan area networks.

Plenary Session 1 : Social Media, Cloud Computing, and Cyber Security

Session Chair

Dr. Shu-Ping Chang

Manager, IBM T.J. Watson Research Center
國際商業機器公司華生研究中心張書平博士

BIOGRAPHY



Dr. Shu-Ping Chang is currently the Laboratory manager of IBM System S Laboratory, a cluster with 600+ nodes and 2000+ CPU cores, at IBM T.J. Watson Research Center. IBM System S project, the base of IBM product InfoSphere Streams, uses stream processing architecture for massive information computing and management as decision making support. His primary function is System S Laboratory management, prototype systems development and cluster system administration automation especially in faults management. Dr. Chang has more than 20 years research and product development experiences in the Computer and Information technology arena. He has broad and in depth knowledge in computer system hardware architecture and software structure in computer communication, relational database, internet web based solutions and multimedia systems.

In 2003-2004, Dr. Chang was a Software Development Manager of Integrated Content Management Solution (ICMS) Department in the IBM Software Group. He led a team of technology experts on Electronic Record Management (ERM) and Content Management (CM) for professional consulting and development services. During 2000-2003, as one of the development manager, his department was responsible for IBM Multiplatform Media Production Suite (MPS) product development in IBM Industrial Solution Units (ISU). This product was developed and used by CNN News Library as their Content Management System (CMS). CNN later takes over all assets of this product in 2003.

From 1996-1999, he has accomplished professional service for MCI video phone mail system project, Media Asset Management (MAM) architecture initiative design and data layout framework (DLF), and several multimedia related products development. His primary responsibility was to architect and design multimedia communication system and end-to-end solution especially for network based (internet/intranet) real time video media.

Dr. Chang has a Ph.D. in Computer and Information Sciences from University of Minnesota with special focus in Computer Communication and System. He has a Master of Science degree from University of Minnesota with major in Computer and Information Sciences and minor in Electrical Engineering. His master project is in Computer Vision area. He also has a Bachelor of Sciences degree, first place honor, from National Chiao-Tung University, Republic of China, in Communication Engineering.

Plenary Session 1 : Social Media, Cloud Computing, and Cyber Security

“Secure Cloud Computing”

Professor Ruby B Lee

Director, Princeton Architecture Lab for Multimedia and Security (PALMS)
Department of Electrical Engineering
Princeton University
普林斯頓大學電機系李佩露教授

BIOGRAPHY



Ruby B. Lee is the Forrest G. Hamrick Professor of Engineering and Professor of Electrical Engineering at Princeton University, with an affiliated appointment in the Computer Science department. She is the director of the Princeton Architecture Laboratory for Multimedia and Security (PALMS). Her current research is in designing security and new media support into core computer architecture, embedded systems and global networked systems, and in architectures resistant to Distributed Denial of Service attacks and Internet-scale epidemics. She teaches courses in *Cyber Security* and *Processor Architectures for New Paradigms*. She is a Fellow of the Association for Computing Machinery (ACM) and a Fellow of the Institute of Electrical and Electronic Engineers (IEEE). She is Associate Editor-in-Chief of *IEEE Micro* and Editorial Board member of *IEEE Security and Privacy*.

Prior to joining the Princeton faculty in 1998, Dr. Lee served as chief architect at Hewlett-Packard, responsible at different times for processor architecture, multimedia architecture and security architecture for e-commerce and extended enterprises. She was a key architect in the definition and evolution of the PA-RISC architecture used in HP servers and workstations, and also led the first CMOS PA-RISC single-chip microprocessor design. As chief architect for HP's multimedia architecture team, Dr. Lee led an inter-disciplinary team focused on architecture to facilitate pervasive multimedia information processing using general-purpose computers. This resulted in the first desktop computer family with integrated, software-based, high fidelity, real-time multimedia. Dr. Lee also co-lead a multimedia architecture team for IA-64. Concurrent with full-time employment at HP, Dr. Lee also served as Consulting Professor of Electrical Engineering at Stanford University. She has a Ph.D. in Electrical Engineering and a M.S. in Computer Science, both from Stanford University, and an A.B. with distinction from Cornell University, where she was a College Scholar. She is an elected member of Phi Beta Kappa and Alpha Lambda Delta. She has been granted 115 United States and international patents, with several patents pending.

Plenary Session 1 : Social Media, Cloud Computing, and Cyber Security

“Smarter City Services and Smarter Cloud”

Dr. Milind Naphade

Program Director of Smart City Services and Smarter Cloud
IBM T.J. Watson Research Center

BIOGRAPHY

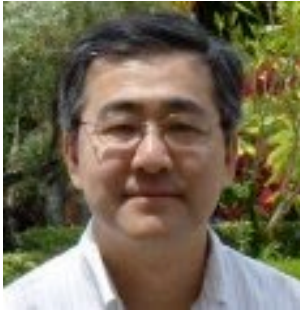
Plenary Session 2 : Emerging Broadband Technology and Multimedia Services

Session Chair

Dr. Jih-Shyr Yih

Manager, Services Transformation Initiatives
Services Research, IBM T.J. Watson Research Center

BIOGRAPHY



Dr. Jih-Shyr Yih (易繼實) did his undergraduate study in Computer Science and Information Engineering at National Taiwan University. He received his doctoral degree in Computer Science and Engineering from U. of Michigan, Ann Arbor. He has twenty years of R&D and management experiences at IBM T.J. Watson Research Center. Presently, Dr. Yih leads services transformation initiatives for IBM.

From 2005 to 2008, he was chief of staff to VP Services Research, for hiring, communications, technical planning, strategy execution, and awards of eight global labs with 550 researchers and budget over \$100M.

From 2000 to 2005, he led teams in creating IBM's advanced commerce solutions, such as the ibm.com Common Commerce Engine, Global Asset Reuse Services private marketplace, and Websphere Commerce multichannel solutions. He also worked on many complex client engagements worldwide.

He took assignments with Retail Core Banking Solutions in Copenhagen, Denmark, and Networked Applications & Services Division in White Plains, NY. He was an adjunct faculty member at the Columbia University. He has been awarded two IBM Outstanding Innovations Awards and published over 50 technical journal and conference papers.

Plenary Session 2 : Emerging Broadband Technology and Multimedia Services

“Mobile Visual Search and Augmented Reality”

Professor Shih-Fu Chang

Director, Digital Video and Multimedia Lab
Department of Electrical Engineering
Columbia University
哥倫比亞大學電機系張世富教授

BIOGRAPHY



Chang is an active researcher leading development of novel theories, algorithms, and systems for content-based image video search, visual communication, multimedia analytics, as well as media forensics. His work has been influential in shaping the vibrant fields of content-based multimedia retrieval (see frequently cited papers). In the 90's, he and his students developed several of the first image/video search engines, such as VisualSEEK, VideoQ, and WebSEEK. He has also been recognized with technical awards and best paper awards for inventing novel systems that combine content analytics, adaptive mobile communication, and multimedia summarization. Other significant contributions include large-scale concept-based video search engines (e.g., CuZero), a widely used library of image classification models (e.g., Columbia374), international multimedia indexing/communication standards (e.g., MPEG-7 and MPEG-21), and large multimedia ontologies (e.g., LSCOM). His group demonstrated the best multimedia indexing performance in international benchmarking forums such as TRECVID (2008 and 2010). Chang led the ADVENT university-industry research consortium with the participation of more than 25 industry sponsors. Many video indexing technologies developed by his group have been licensed to companies. He has received the IEEE Kiyoo Tomiyasu technical field award, IBM Faculty Award, NSF CAREER Award, and ONR Young Investigator Award. He and his students have won many paper awards, including the Most Cited Paper of the Decade Award from Journal of Visual Communication and Image Representation. He served as the Editor-in-Chief of the IEEE Signal Processing Magazine (2006-8), Chair of Columbia Electrical Engineering Department (2007-2010), general co-chair of ACM Multimedia Conference in 2000 and 2010, and advisor for several media technology companies and research institutions. His research has been broadly supported by government agencies as well as industry sponsors. He is an IEEE Fellow and a Fellow of the American Association for the Advancement of Science.

Plenary Session 2 : Emerging Broadband Technology and Multimedia Services

“Data Center Network Designs”

Professor H. Jonathan Chao

Head, Department of Electrical and Computer Engineering
Polytechnic Institute of NYU
紐約大學理工學院電機及電腦工程系主任趙鴻翔教授

BIOGRAPHY



H. Jonathan Chao is Department Head and Professor of Electrical and Computer Engineering at Polytechnic Institute of New York University, Brooklyn, NY, where he joined in January 1992. He has been doing research in the areas of network designs in data centers, terabit switches/routers, network security, and networks on the chip. He holds 42 patents with 9 pending and has published nearly 200 journal and conference papers. He has also served as a consultant for various companies, such as Huawei, Lucent, NEC, and Telcordia.

During 2000–2001, he was Co-Founder and CTO of Core Networks, NJ, where he led a team to implement a multi-terabit MPLS (Multi-Protocol Label Switching) switch router with carrier-class reliability. From 1992 to 1999, he taught short courses 3 times a year in the subjects of SONET, ATM, IP, MPLS, switcher/router designs, to industry people through UC Berkeley and Oxford University’s continuing education programs. From 1985 to 1992, he was a Member of Technical Staff at Telcordia, where he was involved in transport and switching system architecture designs and ASIC implementations, such as the world’s first SONET-like Frammer chip, ATM Layer chip, Sequencer chip (the first chip handling packet scheduling), and ATM switch chip. From 1977 to 1981, he was a Senior Engineer at Telecommunication Labs of Taiwan performing circuit designs for a digital telephone switching system.

Prof. Chao is a Fellow of the IEEE for his contributions to the architecture and application of VLSI circuits in high-speed packet networks. He received the Telcordia Excellence Award in 1987. He is a co-recipient of the 2001 Best Paper Award from the IEEE Transaction on Circuits and Systems for Video Technology. He coauthored three networking books, *Broadband Packet Switching Technologies – A Practical Guide to ATM Switches and IP Routers* (New York: Wiley, 2001), *Quality of Service Control in High-Speed Networks* (New York: Wiley, 2001), and *High-Performance Switches and Routers* (New York: Wiley, 2007).

Prof. Chao received his B.S. and M.S. degrees in electrical engineering from National Chiao Tung University, Taiwan, and his Ph.D. degree in electrical engineering from Ohio State University.

Plenary Session 3 : Media Art, Creative Design, and Cultural Industry Development

“Value-added Applications and Marketing Promotion for the Digital Archiving of Arts”

Professor Yung-Cheng Hsieh

Dean, Office of Research and Development
National Taiwan University of Arts
國立台灣藝術大學研究發展處研發長謝顯丞教授

BIOGRAPHY



Dr. Yung-Cheng Hsieh is currently the Dean of Research and Development and Professor of Graphic Communication Arts Department at the National Taiwan University of Arts (NTUA) (<http://gca.ntua.edu.tw/files/11-1000-10-2.php>). He was the Chairperson of Department of Graphic Communication Arts between 2003 and 2010 and has been invited to international conferences and seminars related to graphic communication technology, digital archives, and printing technology every year. Dr. Hsieh earned both his B.S. and M.S. degree in Kansas and Missouri, and Ph.D. degree in Industrial Technology with Statistics minor from Iowa State University. He taught at Illinois State University before he began teaching at NTUA. As a Visiting Professor during the summer of 2008, he taught at Department of Printing & Packaging of Wuhan University in China. Dr. Hsieh also conducted researches with Industrial Technology Department of Appalachian State University (NC, USA) as a Distinguished Full Professor in the summer of 2009.

Dr. Hsieh specializes in graphic communication technology, digital archive and e-Learning, digital content development and application, applied statistics, experiment design, cultural creative industry. He received Silvius-Wolansky Award for outstanding research by the Iowa State University in 1997, Distinguished Research Award by National Science Council in 1999, Outstanding Professor in Industrial Technology Award by National Association of Industrial Technology of USA in 2002, The Research Excellence Award of NTUA in 2003 and 2006, and Top 100 Project Manager by Taiwan Project Management Association in 2008 and 2010 (Level D and C Certificate). He is the author of "Characteristics and Quality Specifications for Taiwan's Sheetfed Lithographic Industry", "Computer to Plate", "CD Waterless Offset Printing", "Archiving Art and Digitization", "Evaluation of Digital Archives", "Handbook of Digital Archiving Techniques and Processes", "The Print Attributes of Hybrid Screen Technology", etc. (Blog: <http://actofntua.blogspot.com>; Facebook Group: <http://www.facebook.com/group.php?gid=157218470967581>)

For the past 10 years, Dr. Hsieh has written numerous articles for publications including more than 70 articles in peer-reviewed journals, more than 90 conference articles at national and international conferences, and more than 60 technical reports in the area of his interest. Dr. Hsieh also has received more than 50 grants from National Science Council, Council for Culture Affair, Ministry of Education, and other government and industrial agencies to assist the development of the graphic communication, digital content, and cultural creative industry in Taiwan.

Plenary Session 3 : Media Art, Creative Design, and Cultural Industry Development

“ARTstor : A Digital Image Library for Education and Scholarship”

Dr. William Ying

Chief Information Officer and Vice President of Technology
ARTstor
Email: wwy@artstor.org

BIOGRAPHY



Dr. William Ying is the Chief Information Officer and Vice President of Technology for ARTstor. As CIO and VP of Tehcnology, Dr. Ying is responsible for the effective deployment of hardware, databases, and software (both licensed and developed in-house) to maximize the quality of services delivered to the ARTstor user community.

Plenary Session 4 : Cloud Computing and the Data Center of the Future

“Smarter Public Safety”

Dr. Chiao-Fe Shu

STSM, IBM Research
Chief Technologist, GTS Physical Security Service
IBM T. J. Watson Research Center
國際商業機器公司華生研究中心徐秋風博士

BIOGRAPHY



Dr. Chiao-Fe Shu has received his Ph.D. from Computer Science and Engineering Department of University of Michigan in 1993. He is an expert architect, programmer, and researcher with over 16 years of industrial experience. He has co-founded Virage Inc. in 1994. His research and development covers the areas of Visual Computing, Multimedia Indexing and Retrieval, and Surveillance Video Analytics and Systems. Since co-founded Virage, he focused on developing viable commercial applications based on Content-Based Retrieval technology. They included Stock Photo Image System, Trademark Search System, Image Informatics System, Audio/Video Indexing/Retrieval System. The image informatics application developed by him has led to another well-funded private company called Scimagix.

Dr. Chiao-Fe Shu has published extensively in his research areas and owns 14 US patents. Dr. Chiao-Fe Shu also has solid software product development and management experience through all phases of development cycle. He joined IBM Research in 2004 and led a successful commercialization of Smart Video Surveillance Systems. He is currently on an assignment from Research as the CTO for IBM GTS Physical Security Service to lead Advanced Video Analytics Research and Development, Cloud Computing for Public Safety, and Strategy for Smarter Public Safety for Smarter Cities.

Plenary Session 4 : Cloud Computing and the Data Center of the Future

“High Performance Computing Cloud”

Dr. Zon-Yin Shae

Research Staff Member
IBM T.J. Watson Research Center
國際商業機器公司華生研究中心薛榮銀博士

BIOGRAPHY



Dr. Zon-Yin Shae is a Research Staff Member with the IBM T. J. Watson Research Center, Yorktown Heights, New York since 1989. He had published numerous papers and held more than 40 patents in the areas of SIP/VoIP converged networks, multimedia, distributed and parallel processing, high performance computing, cloud, and services computing. He was a pioneer in multimedia data processing and streaming. He got IBM research award for recognizing his first of kind work on massive real time broadcasting and streaming of Atlanta City Olympic events worldwide across Internet. Dr. Shae has been a member of the IBM SIP task force to define a strategic position and promote the awareness of future critical role of SIP/VoIP in the voice/data converged network to the IBM business. He was an active member and IBM representative of H323 and MPEG international standard group.

His current research is on designing a high performance computing (HPC) cloud system by transforming IBM Blue Gene (BG) resources into an easily accessible and consumable cloud environment with a HPC cloud management layer to cloudify BG and accelerate the commercialization of BG for the adoption of scientific application research community into commercial space. The cloud enablement layer provides a resource management mechanism to enable scalable social aware resource reservation and scheduling for the HPC resources which won 2011 IEEE SCALE challenge award. He is also working on the network virtualization of a cloud environment in data center to support friendly migration of applications to cloud. Enterprise applications can have a large number of related servers running on the enterprise infrastructure and rely on services from network. A layer of network virtualization is required in the cloud to mediate the network differences between source and target system to speed up the application migration process. Dr. Shae received his B.A. and M.S. in electronic engineering from National Chiao-Tung University, Taiwan, and his Ph.D. in electrical engineering from University of Pennsylvania at Philadelphia, USA, in 1989 and joined IBM Watson Research since then. He took one year sabbatical leave from IBM to National Chiao-Tung University Taiwan as visiting professor at 1996. He is an IEEE senior member.

