



**December 12-13, 2018**  
**San Francisco Marriot Marquis Hotel**

**Organizer:**



STANFORD UNIVERSITY  
US-ASIA TECHNOLOGY  
MANAGEMENT CENTER

**KAIST**

KAIST Bright Internet  
Research Center



WISP 2018

AIS SIG of Information  
Security & Privacy

# Bright Internet Global Summit 2018

## @ San Francisco

December 12-13, 2018  
 San Francisco Marriot Marquis Hotel  
[www.brightinternet.org/big2018](http://www.brightinternet.org/big2018)

Time	December 12, 2018
<b>Session A</b> 9:00 ~ 10:10	<b>Bright Internet and Paradigm Shift of Cybersecurity and Privacy</b> Mark Cummings (Bace Cyber Security Institute) Bongsik Shin (San Diego State Univeristy)
	Jae Kyu Lee (Southern University of Science and Technology) Alessandro Acquisti (Carnegie Mellon University) Gyoo Gun Lim (Hanyang University, Seoul)
10:10 ~ 10:30	Break
<b>Session B</b> 10:30 ~ 11:50	<b>Designing Next Generation Internet with the Bright Internet</b> Chris Paolini (San Diego State University)
	Xing Li (Tsinghua University and CERNET, China) John Hess (CENIC, USA) Jeonghoo Moon (KISTI, Korea)
11:50 ~ 13:30	Lunch (All Participants)
<b>Session C</b> 13:30 ~ 14:40	<b>Measuring and Motivating Origin Responsibility and Trust</b> Gene Moo Lee (University of British Columbia)
	Yun-Sik Choi (University of Texas, Austin) Alvin Leung (City University of Hong Kong) Foy Shiver (Anti-Phishing Working Group)
14:40 ~ 15:00	Break
<b>Session D</b> 15:00 ~ 16:10	<b>Bright Internet Business Models</b> Dan Kim (University of North Texas)
	Mari Heiser (Chief Technology Officer for IBM Cloud, North America) Sangpil Han (Arizona State University) Jae Kyu Lee (Southern University of Science and Technology) Xiaosheng Tan (360 Tech, Ltd)
16:10 ~ 16:30	Break
16:30 ~ 16:40	<b>Bright Internet Award Ceremony</b>
<b>Session E</b> 16:40 ~ 17:50	<b>Balancing Preventive and Protective Cybersecurity Paradigm</b> Ramayya Krishnan (Carnegie Mellon University)
	David Murungi (Bentley University) Anat Zeelim-Hovav (AIS SIG SEC) Jean-Henry Morin (University of Geneva)

## BIGS2018@SF - Themes

### A. Bright Internet and Paradigm Shift of Cybersecurity and Privacy

What should we do to make the cyberspace safe fundamentally? To prevent the risk of cybercrimes and malicious behaviors from the threat sources, what should the design goals of future Internet be? What are key privacy issues and how can we reconcile the issues of privacy with preventive cybersecurity? What should be the architecture of Bright Internet with applications? What are the potential of new businesses opportunities in this endeavor, and what is and should be the national policies?

**Session Chair:** Mark Cummings, CTO of Bace Cyber Security Institute,  
and Bongsik Shin, San Diego State University

- 1) **Goals and Global Progress of Bright Internet** (Jae Kyu Lee, Southern University of Science and Technology)
- 2) **Economics and Behavioral Aspect of Privacy in Designing Future Internet** (Alessandro Acquisti, Heinz College, Carnegie Mellon University)
- 3) **Discussant** (Gyoo Gun Lim, Hanyang University)

### B. Designing Next Generation Internet with the Bright Internet

Should the protocol of future Internet fundamentally consider the cybersecurity? Can the principles of Bright Internet provide an alternative for future Internet? What other alternatives do we have? What are the available technologies that can be adopted for the implementation of Bright Internet? Can IPv6 and SAVA (Source Address Validation Architecture) be solutions for the identifiable anonymity? What new technologies and services need to be developed further and what kind of global collaboration should be made? Who can take advantage of the new business opportunities?

**Session Chair:** Chris Paolini, San Diego State University

- 1) **Can the IPv6 realize the Bright Internet: CERNET Experience** (Xing Li, Professor of Tsinghua University, Deputy Director of CERNET Research Center)
- 2) **Best Practices and New Architecture Designs for the Secure Future Internet** (John Hess of CENIC, California, USA)
- 3) **How Can We Move Peta-scale Data over KREONET** (Jeonghoo Moon, KISTI, Korea)
- 4) **Do the Vision of Future Internet Projects Coincide with that of the Bright Internet?** (Chris Paolini, Professor of San Diego State University)

### C. Measuring and Motivating Origin Responsibility and Trust

To change the cybersecurity paradigm from self-defensive protection to the preventive elimination of threat sources, we need to take into account origin and deliverer responsibility. How can we measure the trust and responsibility levels of origins and deliverers with the destination matrix? How can we motivate the origins to be more

trustworthy and thus reduce cyberattacks including phishing? Who can become key players in this business?

**Session Chair:** Gene Moo Lee, University of British Columbia

- 1) **CybeRatings: An origin responsibility measurement framework using spam and phishing data** (Yun-Sik Choi, University of Texas at Austin)
- 2) **How to incentivize firms to adopt anti-identity theft countermeasures?** (Alvin Leung, City University of Hong Kong)
- 3) **How can we mitigate the origins and delivery of phishing attacks?** (Foy Shiver, Anti-Phishing Working Group, Atlanta, Georgia)

#### **D. Bright Internet Business Models**

Are the cloud and e-mail services abused as a source of cybercrimes, and did the portal spaces mislead the societal opinions? How serious are these problems and how to fight against them? Can the Principles of Bright Internet fundamentally ameliorate these problems? How were the bots abused to distort political issues? Can the Bright Internet based cloud, e-mail and portal be market driven business models? What are the real world cases with this perspective?

**Session Chair:** Dan J. Kim, University of North Texas

- 1) **How to Fight Cybercrimes on the Cloud?** (Mari Heiser, IBM Watson and Cloud Platform)
- 2) **Bot-Driven Opinion Rigging Scandal: Druking Experience on a Portal Naver in South Korea** (Sangpil Han, Arizona State University)
- 3) **Concept and Practices of the Bright eMail and Bright Cloud** (Jae Kyu Lee, Southern University of Science and Technology)
- 4) **Discussant** (Xiaosheng Tan, President of 360 Tech, Chief Security Officer of Qihoo 360)

#### **E. Balancing Preventive and Protective Cybersecurity Paradigm**

How can we balance the Preventive and Protective Paradigms in Cybersecurity, Privacy, and Fake News? How can we reduce the threat of fake news by adopting the principles of Bright Internet? What should be the technologies and policies of next cybersecurity research and deployment? What can be the new research and business opportunities?

**Session Chair:** Ramayya Krishnan, Dean of Heinz College, Carnegie Mellon University, President-elect of INFORMS

- 1) **How Can We Reduce the Threat of Fake News?** (David Murungi, Bentley University)
- 2) **How to Create Synergy of Preventive Paradigm and Protective Paradigm?** (Anat Zeelim-Hovav, Immediate Past President of AIS SIGSEC)
- 3) **Enhancing Trust of Sharing Economy using the Bright Internet Platform** (Jean-Henry Morin, University of Geneva)

## BIGS2018@SF - Session Chairs and Speakers

### Co-Chair of Bright Internet Global Summit 2018 @ San Francisco

**Richard B. Dasher (Director, US-Asia Technology Management Center, Adjunct Professor, Stanford University)**



He has served as Director of the US-Asia Technology Management Center and Adjunct Professor at Stanford University since 1994. From 1998 – 2015, he was concurrently Executive Director of Stanford’s Center for Integrated Systems (CIS). His research includes innovation systems, open innovation management, and the impact of new technologies on industry value chains. Dr. Dasher serves on program and review committees for government science and technology programs in Japan, Thailand, and Canada, and he is an advisor to start-up companies, business accelerators, venture capital firms, and nonprofits in Silicon Valley, China, India, Japan, and S. Korea. Along with his Stanford work, Dr. Dasher served as an outside board director and member of the Management Council of Tohoku University (2004 – 2010). Previously, he was Director of the U.S. State Department’s Advanced Language and Area Training Centers for U.S. diplomats in Yokohama and Seoul from 1986 – 1990. He received the Ph.D. in Linguistics from Stanford University, and he has experience developing international business as a board director of startup companies in Tokyo.

### A. Bright Internet and Paradigm Shift of Cybersecurity and Privacy



**Mark Cummings (CTO of Bace Cyber Security Institute)**

Information security background includes the system to secure the links between the US Federal Reserve and the Federal Reserve Member Banks; the first security architecture for Chemical Bank; security for the first Shared ATM (Automatic Teller Machine) Network Plus; and top secret US security clearance while working on the commercial portion of TDRSS (Tracking and Data Relay Satellite System). In the network area amongst others, he contributed to the creation of X.25, the first Pay Cable Network HBO, the first Digital Broadcasting System, and was the inventor on the first patent for SDR (Software Defined Radio). In the last few years, Mark has contributed to the leading global technical standards organizations including: ETSI NFV ISG, 3GPP SA5, NGMN, TMF, and IEEE 802. At Stanford Research Institute he started the Pocket Intelligence Program that was the first to identify the move to what became Smart Phones, etc. His doctoral dissertation was on a mathematical model of how network technology shapes society. He has worked in a broad range of roles in industry and academic organizations; is widely published; and holds an MBA in Communications Management from Wharton, and a Ph.D. in Information Systems from Tohoku Imperial

University in Japan. Mark is based in Silicon Valley.



**Bongsik Shin (Professor, San Diego State University)**

He is a professor at San Diego State University with a PhD degree from the University of Arizona. His research and teaching have been on the subject areas of cybersecurity, computer networking, and business intelligence. His academic activities have been funded by 28 different internal and external grants. He has published 33 peer-reviewed research articles in such top quality journals as MIS Quarterly, IEEE Transactions (Engineering Management & Systems, Man, and Cybernetics), Journal of AIS, European Journal of IS, Journal of MIS, Information Systems Journal, Communications of the ACM, Information & Management, and Decision Support Systems.

His global ranking was as high as 26<sup>th</sup> (2012) and 37<sup>th</sup> (2014) based on publications in the Basket of Top6 Information Systems Journals. He is the author of the book, *Practical Introduction to Enterprise Network and Security Management* (2017) (CRC Press, Taylor & Francis). He served as a co-chair of 2016 Americas Conference on Information Systems. He was a recipient of the *Outstanding Faculty Teaching Award* from the Fowler College of Business in 2017.

His recent research efforts have been all about cybersecurity on subjects related to cyber threat intelligence, advanced persistent threats, detection of attack pre-indicators, and ransomware prevention. In 2017, his team was awarded a 3-year research grant from the US Department of Defense on the subject of “Actionable Intelligence-Oriented Cyber Threat Modeling.”



**Jae Kyu Lee (Southern University of Science and Technology)**

He is currently a Visiting Chair Professor of Southern University of Science and Technology. He has been professor of KAIST since 1985, and completed his tenure period as HHI Chair Professor. He was the Founder of Bright Internet Research Center at KAIST, and was the founding chair of the Bright Internet Global Summit held in 2017 in Seoul. He is a fellow and served for the President of Association for Information Systems and a chair of International Conference on Information Systems in 2017 in Seoul.

His current research interest is the development and deployment of Bright Internet technologies, policies and global collaborations. His research evolved from the application of Artificial Intelligence for Managerial Decision Support (various applications such as stock investment. He has conducted 45 granted projects on the topics of the Bright Internet, Green Business, and AI applications in managerial decision supports. He published numerous papers and received best paper awards nine times from the major conferences.

He received a Ph.D. in Operations and Information Systems from the Wharton School, University of Pennsylvania (1985). He was the founding editor-in-chief of the journal, *Electronic Commerce Research and Applications* (Elsevier, SSCI and SCIE Accredited), and

was the founding chair of the International Conference on Electronic Commerce. He was the president of academic societies such as Korea Society of Management Information Systems and Korea Society of Intelligent Information Systems.



**Alessandro Acquisti (Heinz College, Carnegie Mellon University)**

He is a Professor of Information Technology and Public Policy at the Heinz College, Carnegie Mellon University (CMU), the PwC William W. Cooper Professor of Risk and Regulatory Innovation, and an Andrew Carnegie Fellow (inaugural class). He is the director of the Peex (Privacy Economics Experiments) lab at CMU and the co-director of CMU CBDR (Center for Behavioral and Decision Research).

He investigates the economics of privacy. His studies have spearheaded the investigation of privacy and disclosure behavior in online social networks, and the application of behavioral economics to the study of privacy and information security decision making. Alessandro's studies have been published in journals across several disciplines (including Science, Journal of Economic Literature, Proceedings of the National Academy of Science, Management Science, Journal of Consumer Research, Journal of Marketing Research, Marketing Science, Information Systems Research, Journal of Comparative Economics, ACM Transactions, and so forth), as well as edited books, conference proceedings, and numerous keynotes. Alessandro has been the recipient of the PET Award for Outstanding Research in Privacy Enhancing Technologies, the IBM Best Academic Privacy Faculty Award, the Heinz College School of Information's Teaching Excellence Award, and multiple Best Paper awards.



**Gyoo Gun Lim (Hanyang University)**

He is currently a Professor of MIS at School of Business, Hanyang University. He received his Ph.D. in Management Engineering from Korea Advanced Institute of Science and Technology (KAIST) in 2001.

Before joining the Hanyang faculty, he served as a researcher in Samsung Electronics, KT, and International Center for Electronic Commerce. His current research interests include innovative business models, e-business, IT service, intelligent information & knowledge management, and etc. He wrote several books such as "e-Business Management", "Management Information Systems", and etc. and his articles have been published in several journals.

He currently the president of Korea Society of IT Services, and serves the board members of Korea Society of Intelligent Information Systems, Management Information Systems, Database, Knowledge Management, and e-Business Studies. He also successfully performed several projects such as 1st Asia commercial Internet service, KORNET, China Shanghai Telecom SI strategy, KTI business strategy, Korea G2B e-government evaluation, Korea

G4C performance analysis, Korea Information Security Index, Korea Military Informatization Index, IT innovation personnel fostering plan, National Digital Contents Identification plan, Copyright certification policy, Korea film infrastructure utilization plan, Korea SW business registration policy, and Korea SW experts registration policy.



## B. Designing Next Generation Internet with the Bright Internet



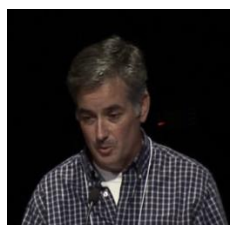
**Chirs Paolini (Professor of San Diego State University)**

He is an Assistant Professor in the Department of Electrical and Computer Engineering at San Diego State University. Chris is the recipient of grants from the Department of Energy and NASA, and five NSF Office of Cyber Infrastructure awards, most recently the current NSF CC\* Grant 1659169 *CC\* Storage: Implementation of a Distributed, Shareable, and Parallel Storage Resource at San Diego State University to Facilitate High-Performance Computing for Climate Science*. Christopher Paolini's current research interests include Internet of Things device development, machine learning, embedded systems, cloud computing, big data analytics, deep learning, software engineering, numerical chemical thermodynamics, numerical chemical kinetics, numerical geochemistry, high performance computing, scientific computing and numerical modeling, high speed (100gbps) networking, cyberinfrastructure development, and cybersecurity. Chris received a B.S. degree in Computer Science in 1991, M.S. degree in Computer Science in 1998, and his Ph.D. degree in Computational Science in 2007, all from San Diego State University.



**Xing Li (Professor, Electronic Engineering Department, Tsinghua University)**

He is Vice Director of CERNET, China Education and Research Network, and was a chair of Bright Internet China Symposium 2018 held in Beijing. He is a founding member of Bright Internet Test Bed Project contributing on the IPv6 based protocol level infrastructure. His interest is: The Internet population reaches 550 million in China and there are many opportunities and challenges. This talk will try to answer the questions of this session and discuss the architecture design experiences, including source address validation, the stateless IPv6 translation and address switching. The trust anchor issue and the China Future Internet Test Bed will also be presented.



**John Hess (CENIC, California, USA)**

He is a network engineer at CENIC, a non-profit organization which seeks to advance education and research statewide by providing the world-class network essential for innovation, collaboration and economic growth. His interests include interconnection, network performance, and data movement. John joined CENIC in 2010.

He is an expert in cyber infrastructure, performance measurement, and research engagement. He has excellent skills in multi-discipline collaborative efforts, project management, education, outreach, and training. He is resourceful and tenacious in troubleshooting and resolving complex issues.

His special includes: Network and data movement performance measurement, analysis, and visualization; Research engagement, advocacy, and analysis toward optimizing data-intensive scientific workflows; BGP policy design and implementation, cyber infrastructure engineering and operations; SDN/SDX, dynamic circuit services, provisioning, measurement and analysis toolsets; Unix/Linux system administration; system compute, storage, and network tuning; python/perl/shell and occasional C programming; fostering collaborative devOps environments.



**Jeonghoon Moon (Korea Institute of Science and Technology Information )**

He is a senior researcher of Korea Institute of Science and Technology Information (KISTI). KISTI is the national Supercomputing & Advanced Research Network Center in Korea. And, especially, working for Dept. Advanced KREONET Center which is Korea Research Environment Open Network as well as Network Engineering/Operation Center. Interested research areas include in Science DMZ & PRP, Network QoS & Network Engineering, Software Defined Network & Future Internet, Cloud Computing & Network Virtualization, Remote Collaboration and so on.

Over the past decade, major research projects have focused on Network Resource Management & NSI implementation, StarLight & GLORIAD project in Korea, Cloud Computing & Remote Collaboration. Since 2015, focusing on Science DMZ & PRP project for development & deploy, expansion & activation in Korea. And also chair of APRP(Asia Pacific Research Platform) at APAN Meeting.

## C. Measuring and Motivating Origin Responsibility and Trust



**Gene Moo Lee (Assistant Professor, University of British Columbia)**

He is an Assistant Professor of Information Systems in Sauder School of Business, University of British Columbia. He received Ph.D. and M.A. in Computer Science from the University of Texas at Austin and B.Sc. in Computer Science and Mathematics from Korea University. From 2015- to 2017, he was an Assistant Professor at the University of Texas at Arlington. From 2005 to 2010, he held various industry positions at Samsung Electronics, AT&T, Intel, and Goldman Sachs. He holds 11 patents in mobile technology and his Erdos number is 3

His research interests are in Business Analytics. In terms of research topics, he is interested in mobile ecosystems, social media, e-commerce, and cybersecurity. Methodologically, he uses AI, machine learning, natural language processing, computer vision, network analysis, econometrics, and field experiments. His works have been published in *MIS Quarterly*, *Journal of MIS*, *Journal of Cybersecurity*, and *Journal of Business Ethics*. He also actively publishes in the CS conferences including *Workshop on the Economics of Information Security*, *ACM Conference on Economics and Computation*, *IEEE INFOCOM*, and *ACM Internet Measurement Conference*.



**Yun-Sik Choi (Ph.D. Candidate, Department of Computer Science, University of Texas at Austin)**

He is a Ph.D. Candidate in Computer Science Department in the University of Texas at Austin. His research interests include cybersecurity, big data analytics, digital media, social media, business analytics, image processing, computer graphics, and game theory. His research has been presented at the *Workshop on the Economics of Information Security (WEIS) 2018*, *INFORMS Conference on Information Systems and Technologies (CIST) 2017*, *Workshop on Information Technologies and Systems (WITS) 2017*, and *KrAIS 2017*. He received the Best Work In Progress Runner Up Award at *WITS 2017* and the Best Paper Award at *KrAIS 2017*.

Yun-Sik is a Ph.D. Candidate in Computer Science Department in the University of Texas at Austin. His research interests include cybersecurity, big data analytics, digital media, social media, business analytics, image processing, computer graphics, and game theory. His research has been presented at the *Workshop on the Economics of Information Security (WEIS) 2018*, *INFORMS Conference on Information Systems and Technologies (CIST) 2017*, *Workshop on Information Technologies and Systems (WITS) 2017*, and *KrAIS 2017*. He received the Best Work In Progress Runner Up Award at *WITS 2017* and the Best Paper Award at *KrAIS 2017*.



**Alvin Leung (Assistant Professor, City University of Hong Kong)**

He is an Assistant Professor at Department of Information Systems, College of Business, City University of Hong Kong. He obtained his Ph.D. and M.Sc. (Information, Risk, and Operations Management) from the University of Texas at Austin, M.Phil. (Information Systems), B.E. (Software Engineering), and B.B.A. (Information Systems) from the University of Hong Kong.

His current research focuses on information security, IT business value, and business analytics. His works have been published in various leading IS journals, such as *MIS Quarterly*, *Management Science*, *Information Systems Research*, and *Decision Support Systems*, and international conference proceedings. He is the recipient of AIS Early Career Award 2017 and Hong Kong University Grants Committee (UGC) Early Career Award 2016/17. He currently serves as Associate Editor for *Decision Support Systems* and the *Communications of the Association for Information Systems*.



**Foy Shiver (Deputy Secretary-General, Anti-Phishing Working Group; CEO & Development Director, Woodstock Clinical Data Systems)**

He is Deputy Secretary-General of APWG (Anti-Phishing Working Group) and a founding director of APWG.EU. In 2004 Mr. Shiver assumed operations management for the nascent non-profit Anti-Phishing Working Group. Since then the organization has grown into a global industry, law enforcement and research focused group dedicated to countering the growing threat of electronic crime. In 2006, He accepted the appointment as Deputy Secretary-General of APWG, charged with cultivating membership around research, education and policy issues fighting cybercrime and electronically mediated fraud. In this role he founded the APWG's Symposium on eCrime Research, the first and only peer-reviewed program focusing exclusively on cybercrime research.

Since 2006 he has grown this annual event and published 130+ peer reviewed cybercrime research papers through IEEE. In 2013 he worked with APWG and CaixaBank to found the new European Foundation APWG.EU. This foundation focuses on cybercrime research and education within the European Union and globally. He has previously worked in Lotus Notes Product Management, and founded a clinical research company: Woodstock Data. He is a proud veteran of the US Army 82nd Airborne Division.

## D. Bright Internet Business Models



**Dan J. Kim (Professor, University of North Texas)**

He is a Fulbright scholar and professor of information technology and decision sciences at the University of North Texas. His research interests are in multidisciplinary areas such as information security and privacy, information assurance, and trust in electronic commerce. His research work has been published or, in forthcoming more than 150 papers, in refereed journals, peer-reviewed book chapters, and conference proceedings including *ISR*, *JMIS*, *JAIS*, *EJIS*, *CACM*, *DSS*, etc. His publications have been cited more than 7,000 times over the last five years. He has been awarded several research grants for multi-years including NSF, NSA, Core Fulbright Scholarship grants, and others. He serves or served as a guest, senior, and associate editor for several top journals including *MISQ*, *ISM*, and *ISF*.



**Mari Heiser (Chief Technology Officer for IBM Cloud, North America)**

She is an IBM Distinguished Engineer and IBM/OpenGroup master certified architect currently CTO IBM Cloud Security – North America. Mari has over 25 years' experience in security, governance, risk, compliance, and technical management experience in cloud, security, networks and web technologies. Mari's industry specific experience has been concentrated in banking, bio-tech, education, aerospace and defense industries.

Before joining IBM Cloud, Mari was a member of IBM Security Division where she served in many capacities over 15 years from Security Architect Consultant to Global Competency Leader for Identity and Access Management working with hundreds of customers around the world.



**Sang Pil Han (Professor, Arizona State University.)**

He is an Associate Professor of Information Systems in the W. P. Carey School of Business at the Arizona State University. Prior to joining the Arizona State University, he was an Assistant Professor of Information Systems in the College of Business at the City University of Hong Kong. He received his Ph.D. in Management Engineering from Korea Advanced Institute of Science and Technology. Han is interested in studying how firms gain useful insights and competitive advantages from big-data and business analytics.

He is especially interested in topics related to mobile analytics, mobile apps, mobile marketing, and social media. Han's recent research focuses on addiction to mobile social apps, mobile targeting, mobile content consumption modeling and mobile media planning. In his research, he relies upon empirical research methods including econometric analyses,

hierarchical Bayesian modeling, dynamic structural modeling and randomized field experiments. His papers were published in top-tier journals such as Management Science, Management Information Systems Quarterly, Information Systems Research among others. He serves an Associate Editor at Information Systems Research.



**Jae Kyu Lee (Southern University of Science and Technology)**

He is currently a Visiting Chair Professor of Southern University of Science and Technology. He has been professor of KAIST since 1985, and completed his tenure period as HHI Chair Professor. He was the Founder of Bright Internet Research Center at KAIST, and was the founding chair of the Bright Internet Global Summit held in 2017 in Seoul. He is a fellow and served for the President of Association for Information Systems and a chair of International Conference on Information Systems in 2017 in Seoul.

He is a founder of the Bright Internet and published fundamental papers that conceptualize the Bright Internet. His current research interest is the development and deployment of Bright Internet technologies, policies and global collaborations. He proposes the Bright eMail Systems and Bright Cloud Extended Networks as a Business Model of Bright Internet Platform. He collaborates the deployment of Bright Internet Business Model and System Development with global industry partners. General introduction can be found in Session A and his homepage at [www.business.kaist.ac.kr/faculty/jklee/](http://www.business.kaist.ac.kr/faculty/jklee/).



**Xiaosheng Tan (360 Tech, Ltd)**

He is Technology President of 360 Tech, Ltd, and Chief Security Officer of Qihoo 360. He was CTO of MySpace, and CTO of Yohoo!China. He was VP of Engineering of Shenzhen Hornson Technology. He is a graduate of Xi'an Jiaotong University.

He was a very result-oriented and effective engineering executive at Yahoo China and 3721. He has a solid set of methodology to manage a large engineering team toward very impressive deliverables, and has led his team to conquer many challenges relentlessly under tight timeline and complex organizational situations. He has a deep understanding of China's internet landscape and what it takes to win. Although his background is in engineering, he has strong business vision as well as leadership skills.

## **E. Balancing Preventive and Protective Cybersecurity Paradigm**



**Ramayya Krishnan (Dean of Heinz College, Carnegie Mellon University, President-elect of INFORMS)**

He is the Dean of Carnegie Mellon University's Heinz College of Information Systems and Public Policy and the W. W. Cooper and Ruth F. Cooper Professor of Management Science and Information Systems at Heinz College and the CMU Department of Engineering and Public Policy. A faculty member at CMU since 1988, Krishnan was appointed Dean in 2008 and later reappointed in 2014 upon the completion of his first term.

In 2016, under Krishnan's leadership, Heinz College was awarded the UPS George D. Smith Prize for educational excellence in analytics. Heinz College is the only institution of higher learning that is home to both the Von Neumann Theory Prize and the UPS George D. Smith Prize, both awarded by INFORMS (The Institute for Operations Researchers and the Management Sciences), the leading organization of scholars and practitioners of analytics.

His research interests focus on consumer and social behavior in digitally instrumented environments. His work has addressed technical, policy, and business problems that arise in these contexts and he has published extensively on these topics. He has served as Department Editor for Information Systems in Management Science, the premier journal of the Operations Research and Management Science community. Krishnan is an INFORMS fellow, a former member of the Global Agenda Council on Data Driven Development of the World Economic Forum, and a former president of the INFORMS Information Systems Society and the INFORMS Computing Society. In 2017, he was elected president of the INFORMS board of directors. He is the recipient of the prestigious Y. Nayuduamma Award for his contributions to telecommunications management and business technology, and the Distinguished Alumnus Award from the Indian Institute of Technology (Madras). He is also the recipient of the 2018 Bright Internet Award (Jae Kyu Lee Award) by the Korea Society of Management Information Systems.

He was educated at the Indian Institute of Technology (Madras) and the University of Texas at Austin. He has a bachelor's degree in mechanical engineering, a master's degree in industrial engineering and operations research, and a Ph.D. in management science and information systems.



**David Murungi (Bentley University)**

He is an assistant professor in the Information and Process Management Department at Bentley University located in Waltham, Ma. He previously served as an assistant professor in the Health Service Administration program at Our Lady of the Lake College in Baton Rouge, Louisiana. He received a Bachelor of Arts in Political Science in 1995 from Williams College in Massachusetts. He also obtained a Master's in Public Administration in 2005 from Louisiana State University and a Ph.D. in Business Administration, with a specialization in Information Systems and Decision Sciences from the same institution. His dissertation examined the role that argumentation played in navigating the conflicting frames of reference that were involved in a Health Information Exchange implementation initiative. His research focuses on Health Information Systems, Discourse Analysis and IS Project Management.



**Anat Zeelim-Hovav (Immediate Past President of AIS SIGSEC)**

She is a professor at Korea University Business School in Seoul, South Korea. Her research interests include the socio-technical aspects of organizational information security, risk assessment, innovation management, and Futures research. Professor Hovav has published in internationally refereed journals such as Information Systems Research (ISR), Information & Management, Communications of the ACM, Journal of Business Ethics, Research Policy, Computers & Security, Information Systems Journal (ISJ), Journal of Pervasive and Mobile Computing, International Journal of Project Management, Information Systems Management (ISM), Communications of AIS (CAIS), Information Systems Frontiers, and Risk Management and Insurance Review. Dr. Hovav is the winner of the 2013 Citation of Excellence Award. She has presented her work internationally in academic and industry conferences and workshops. Dr. Hovav is the immediate past president of the AIS special interest group on security and privacy (SIGSEC), and has chaired a number of information security related workshops and tracks at major conferences such as ICIS, AMCIS and ECIS.



**Jean-Henry Morin (University of Geneva)**

He is associate professor of Information Systems at University of Geneva, Institute of Information Service Science. He is the Director of the bachelor program in Information Systems and Service Science and president of ThinkServices, a Geneva based think(do)tank on Service Science and Innovation, where ThinkData.ch was designed. He was a professor at Korea University Business School, invited professor at Yonsei School of Business and invited researcher at Fasoo.com in South Korea. Furthermore, in 2001 He was a cofounder of a Geneva based company specializing in corporate performance management solutions. His primary research and practice interest is in information security with a particular focus on Digital Rights Management (DRM) in the enterprise sector. His work on Exception Management in DRM environments has been transferred to the industry in partnership with Fasoo.com. This work is within the research area of socially responsible and sustainable security. He also carries out research in blockchain technology, cloud computing, Internet of Things, privacy, data protection, and transparency. His keen interest in Design Thinking as a skill served as a basis for ThinkServices and the creation of an academic FabLab in Geneva. He is the author of a book on digital responsibility (Publisher: Fyp, 2014) where he suggests the value of informed trust and transparency as the basis of the emerging principle of Co-Compliance (collaborative compliance).

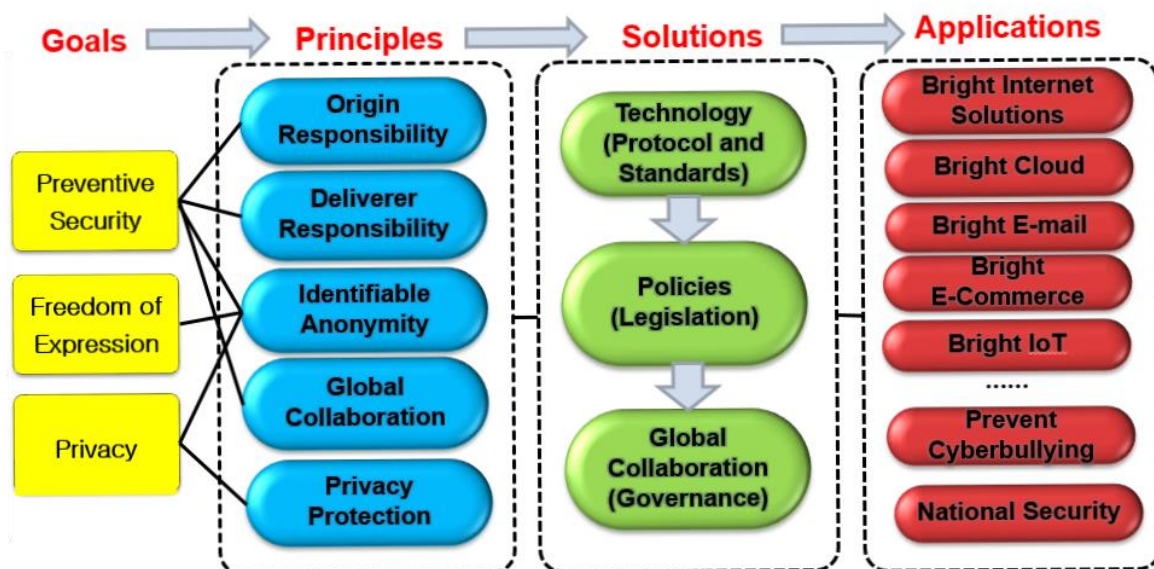


## What is the Bright Internet?

The Bright Internet is proposed as a preventive cybersecurity paradigm of reducing the threat from malicious origins, in contrast with the current self-centric defensive cybersecurity paradigm at receiver sites. For this purpose, the principles of origin responsibility and deliverer responsibility are adopted. However, these preventive security-related principles may hinder the freedom of anonymous expression. Thus, the principle of identifiable anonymity is adopted in order to allow the freedom of anonymous expression for innocent netizens, also enabling the traceability and identifiability of malicious origins. In addition, the preventive security schemes should not infringe the privacy of innocent netizens without valid search warrants. The Bright Internet may be deployed in a certain country during its test period, but it should be propagated to globally to maximize its benefit with an adequate collaboration mechanism.

The implementation of these principles requires technologies and system, and national policies and international collaboration as depicted in the following diagram [Lee et al., 2018]. We believe the Preventive Cybersecurity Paradigm can be a disruptive paradigm which can complement the current defensive cybersecurity solutions. Thus, the architecture of Bright Internet can provide a foundation of designing and developing the next generation Internet with security and trust. Materials on vision and progress can be found at [www.brightinternet.org](http://www.brightinternet.org).

We believe that the propagation of Bright Internet can dramatically reduce the risk of cybercrimes, fake news, and cyberbully and so forth. We also believe the Bright Internet paradigm can create a new business model just like credit card business did although adequate government policy and R&D support will boost its propagation.



[Source: Lee, JK, DG Cho, GG Lim, Journal of AIS, 2018]

## What is Bright Internet Global Summit?

The vision of Bright Internet was first adopted and announced by the Council of Association of Information Systems under the Grand Vision of ICT-enabled Bright Society. The notion of Bright Internet was presented in keynote speeches and panels at many AIS Conferences such as the International Conference on Information Systems (ICIS), Pacific Asia Conference on Information Systems (PACIS), European Conference of Information Systems (ECIS), American Conference of Information Systems (AMCIS), International Conference of Electronic Commerce (ICEC), Workshop of AIS SIG Information Security and Privacy (WISP), and the IFIP Security, ACM/IEEE Cloud Computing, and many others. However, it was necessary to hold a dedicated meeting, thus the first Bright Internet Global Summit was held on December 8-10<sup>th</sup> of 2017 in Seoul, Korea as a pre-ICIS Workshop.

The Bright Internet Global Summit (BIGS) is a global forum of exchanging the vision and research progress and outcomes on various issues of Bright Internet. We wish it will become also a channel of deriving agreements among stakeholders and member countries for mutual benefits which can be realized neither by academic community alone nor by a single country alone. The relevant stakeholders should include academic researchers, research institutions, business leaders and practitioners, government agencies, legislators, standard organizations, and international organizations.

BIGS2018@SanFrancisco in December 12<sup>th</sup> is the second meeting of BIGS. But the national symposiums with global perspective were held in China and Korea such as Bright Internet China Symposium (BICS) held at Xi'an Jiaotong University in June 2017, and at Tsinghua University at Beijing in June 2018. Korea has also held a number of workshops on Bright Internet. The previous presentation materials can be read at [www.brightinternet.org](http://www.brightinternet.org), but the access to BIGS2018@SG will be allowed only to the valid members to protect the intellectual property right.

The next regular BIGS will be held at Xi'an along with PACIS2019, Munich with ICIS2019, and New Deli with ICIS2020. BIGS may be held with other occasions, or as an independent meeting when it is necessary. For any inquiries on hosting BIGS and national symposiums, contact [jkleee@kaist.ac.kr](mailto:jkleee@kaist.ac.kr).

### **Academic Track with WISP**

To create synergy of the academic research track of BIGS2018, the academic track will be held in December 13<sup>th</sup> as a track of the Workshop of Information Security and Privacy (WISP) organized by AIS SIG-SEC (Security and Privacy). AIS members can register for both days at a discounted fee. But the academic track of Bright Internet will be recognized in the [www.brightinternet.org](http://www.brightinternet.org) as well.

## **BIGS2018@SF - Academic Track**

This call for papers for the academic track in December 13th invites original research articles addressing a broad coverage of technical, managerial, economic, and policy solutions towards developing the Bright Internet and Trust, with emphasis on preventive cybersecurity and global trust building. Papers may employ any applicable IS research method (case study, survey, analytical modeling, experiments, computational models, design science, and so forth).

If you have any questions, please contact Dan J. Kim at dan.kim@unt.edu. Academic track participants for BIGS 2018 December 13<sup>th</sup> should register for WISP 2018 or pre-ICIS 2018. If AIS member wants to participate in the practitioner sessions in December 12th, a separate registration at [www.brightinternet.org](http://www.brightinternet.org) is necessary with an AIS member discount.

### **Program Chairs**

Dan J. Kim (University of North Texas, USA)

Jae Kyu Lee (Southern University of Science and Technology)

Michele Maasberg (Louisiana Tech University, USA)

### **Program Committee**

Bongsik Shin (San Diego State University)

Christopher Paolini (San Diego State University)

Daegon Cho (KAIST, Korea)

Gene Moo Lee (University of British Columbia)

Jaehyeon Ju (McGill University, Canada)

James Parrish (University of North Texas)

Jingguo Wang (University of Texas at Arlington)

Manoj Thomas (Virginia Commonwealth University)

Mehrdad Koohikamali (University of Redlands)

Mohammad Salehan (California State Polytechnic University)

Mohammadreza Mousavizadeh (Western Michigan University)

Obiageli Ogbanufe (Oklahoma State University)

Raghu Santanam (Arizona State University)

Rui Chen (Iowa State University)

Ugochukwu Etudo (University of Connecticut)

Victoria Yoon (Virginia Commonwealth University)

Vijayan Sugumaran (Oakland University)

Zhangxi Lin (Texas Tech University)

## BIGS2018@SF - Organizers



STANFORD UNIVERSITY  
US-ASIA TECHNOLOGY  
MANAGEMENT CENTER

The logo for KAIST, consisting of the letters "KAIST" in a bold, blue, sans-serif font with a blue horizontal line underneath.

KAIST Bright Internet  
Research Center



WISP 2018

AIS SIG of Information  
Security & Privacy

### Conference Chairs:

Richard Dasher (Stanford University, Director of UATM Center, USA)

Anat Zeelim-Hovav (Immediate Past President of AIS SIGSEC)

Jae Kyu Lee (Southern University of Science and Technology, China)

### Program Chairs

Jane Fedorowicz (Bentley University, Past President of AIS, USA)

Christopher Paolini (San Diego State University, USA)

Dan J. Kim (University of North Texas, USA)

### Organizing Chairs

Briana Burrows (Stanford University, Assistant Director of UATM Center)

Bongsik Shin (San Diego State University, USA)

Daegon Cho (KAIST, Seoul, Korea)

### Program and Organizing Committee

Gene Moo Lee (University of British Columbia, Canada)

Victoria Yoon (Virginia Commonwealth University, USA)

Zhangxi Lin (Texas Tech University, USA)

Jun Bi (Tsinghua University, China; Program Chair of BICS 2018)

Gyoo Gun Lim (Hanyang University, Korea)

Jaehyeon Ju (McGill University, Canada)

Jiyong Park (KAIST, Seoul, Korea)

### Advisors

David Farber (Carnegie Mellon University and Keio University, Japan)

Wei Huang (Xi'an Jiaotong University, China; Chair of BICS 2017)

Helmut Krcmar (Technical University of Munich: BIGS2019 Co-Chair)

Ritu Agarwal (University of Maryland: BIGS2019 Co-Chair)

Joey George (Iowa State University: BIGS2020 Co-Chair)

Raghav Rao (University of Texas, Saint Antonio: BIGS2020 Co-chair)