

Digital and societal transformations

ISTAS21 Special Session on Sunday October 31st, 2021, 9:15-10:45am (EDT)

Session Presenters

Laurie Lau

APATAS, ISTAS2022 Chair, Organizing Committee

Luis Kun

*Distinguished Professor Emeritus, Center for Hemispheric, U.S.A.
Chairman, IEEE- SSIT Distinguished Lecturer Program
Defense Studies at National Defense University*

T V Ramachandran

President, Broadband India Forum

Lennon Chang

*ISTAS2022 Finance Chair
Monash University*

Chair/Moderator

T V Gopal

*ISTAS 2022 Chair, Technical Programme Committee
Anna University*

Scribe

Thenusha Satsoruban

University of Waterloo

Program Description—As a kickoff teaser for next year’s ISTAS 2022 conference, “Digital and Societal Transformations,” this interdisciplinary panel considers the social impact of digital innovations like 5G in the contexts of privacy, security, socio-economic prosperity and cybercrime. The panelists, who are international leaders and experts in privacy, cybersecurity, and technology policy and governance, will discuss and share their concerns on the socio-cultural and economic benefits and challenges of the ongoing digital transformation.

Keywords—5G, Internet of Things (IoT), cybercrime, surveillance, healthcare

After a brief introduction of the ISTAS 2022 conference themes, Gopal called on the first speaker, Lennon Yao-Chung, who spoke of cybercrime in the era of 5G wireless technologies. Defining current types of 5G and Internet of Things (IoT) technologies, Chung discussed the potential benefits of smart cars, smart fridges and smart toilets. However, he also called attention to the risk of hacking with such devices and discusses scenarios in which IoT devices have been harnessed to inflict harm. Crimes in the realm of surveillance, privacy invasion, sexual assault in online gaming and domestic violence have all been enabled through developments in IoT. Gopal then introduced speaker Laurie Lau, who discussed the possibilities of 5G and even ‘6G’ technologies. They revealed that Asia will house 60% of the world’s 5G technology by the year 2026 and that the industry generates ~\$70 billion USD in revenue annually. Lau discusses the three main countries that are readily adopting 5G technology—China, South Korea and Japan. He talked about the cultural differences between these countries amidst their shared cultural affinity for rapid technological adoption, noting the differences in each nation’s adoption of 5G networks. He also spoke to the financial benefits of 5G, as it’s believed to reduce production costs. Therefore, when a low value manufacturer switches to 5G, they can become a high volume hence higher value manufacturer. TV Ramachandran then spoke to India’s approach to 5G development as an emerging nation. He attributed India’s rapid switch to 5G as coinciding with the urgent need for augmentation of social services, such as healthcare. Switching to 5G would allow for remote communities in the country to better access quality healthcare. Ramachandran then reviewed several industrial use cases that can now operate at a lower cost, benefitting companies across that country. He pinpointed that the economy will benefit from the added efficiency of 5G as well as increased social capital, ultimately driving industrial innovation. Luis Kun then spoke to the need for integration of digital healthcare and a humanitarian philosophy of technology. Kun discussed the lack of a holistic vision in current iterations of global healthcare. With the existence of “islands of excellence,” information is not shared globally, locally or even between agencies due to privacy concerns. Additionally, within the U.S., large amounts of data and information are housed in different places. For instance, vaccine registries, dental services and mental health information are kept separate from general health information despite the obvious overlap. He then shifted his focus to discuss the pressing issue of cyber-attacks on healthcare information systems. He discussed two instances of ransomware attacks that occurred within the last year; one attack on the Irish healthcare system and another on the Colonial Pipeline in the United States. He ultimately suggested that attacks of this nature threaten infrastructure at a rate and severity much higher than any ‘natural’ disaster or physical conflict.

Gopal facilitated further discussion that made it clear 5G technologies and digitally integrated healthcare will be top of mind at ISTAS2022, as well as a broader conversation about technology as a “change agent” for social transformation rather than another opiate. All the panelists extended a warm welcome to “celebrate complexity” in Hong Kong at ISTAS 2022 (scheduled 10-12 November 2022).