ISTAS 2022: IEEE International Symposium on Technology and Society 2022

VIRTUAL CONFERENCE

Hong Kong,
November 10-12, 2022

Conference Theme: "Digital and Societal Transformations"

Conference website: https://www.istas22.org

11 Theme Tracks: https://www.istas22.org/program/

2022 is the 50th Foundation Day of IEEE’s Commitment to Social Implications of Technology. Please join us at ISTAS2022 conference to celebrate this occasion

ISTAS 2022 : Theme Tracks
1. Kaleidoscoping Data
2. Integrated Digital Healthcare
3. 5G Technologies with a Lite Touch on 6G
4. UN SDGs and Basic Sciences
5. IEEE SSIT 50 Years: Transformational Achievers and Achievements
6. IEEE SSIT 50 Years: Voices of the End-Users
7. Town Hall on "Internet Governance"
8. Robotics and Automation
9. Bioengineering Communications
10. Technology, Ethics & Evolving Standards
11. Social Choice and Decision Complexity

CO-LOCATED
Securitization for Sustainability of People and Place: A Call to Transdisciplinarity, The Fifteenth Workshop on the Social Implications of National Security (SINS22), Date : 11 November 2022

ETHICS DAY @ ISTAS 2022  Date: 12 November 2022

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Dr. T V Gopal
Chair, Technical Programme Committee
Anna University Chennai, INDIA

Dr. Lennon Chang
Chair, Finance Committee Senior Lecturer, Criminology
School of Social Sciences, Monash University Australia

Conference Record #55053
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Anna University Chennai, INDIA

Dr. Lennon Chang  
Chair, Finance Committee  
Senior Lecturer, Criminology School of Social Sciences, Monash University Australia

Conference Record #55053
October 23, 2022

Dear colleagues:

On behalf of the Board of Governors of the IEEE Society on Social Implications of Technology (SSIT), I welcome you to the 2022 IEEE International Symposium on Technology and Society (ISTAS), our flagship conference. It is where community members from around the world gather to discuss pressing issues and share insights. Events taking place during this 50th anniversary year of the founding of our community have a special significance because they provide opportunities to look back at how the world has changed and forward to what’s next. So much has changed since 1972, including the deployment of the Internet, mobile phones, social media platforms, and block chain technology. What has not changed is the dedication of our volunteers to helping people understand the social implications of technological change. The ISTAS conference perfectly illustrates this motivation.

More than a quarter century ago, I did my first service as general chair for an ISTAS conference. I learned that a great deal of work goes into a successful event—even with a superb team there are so many risky decisions to make and so many details to follow up. I am grateful to the ISTAS 2022 team for their efforts, and I especially want to thank the leaders of the organizing committee: Laurie Lau, TV Gopal, and Lennon Chang, as well as SSIT conferences vice president Jay Pearlman. They led a heroic team to overcome challenges due to a pandemic, geopolitics, and widely different time zones.

As you participate in the conference and read the proceedings, I invite you to join the long conversation about the social implications of technology. Offer your insights and research, engage in critical but constructive discussions with others, join us in the important work of making the world better, and come back next year!

Sincerely yours,

Clinton J. Andrews, PhD PE AICP FAAAS
2021-2022 President, IEEE Society on Social Implications of Technology
Dr Laurie Lau, ISTAS2022 Hong Kong, Conference General Chair
Chairman, Asia Pacific Association of Technology and Society (APATAS)

It is my greatest honour as the Conference General Chair to welcome all of you to IEEE International Symposium on Technology and Society (ISTAS22HK), virtually hosted by Hong Kong SAR. The 2022 symposium is very special and meaningful one indeed, as we are coincided with IEEE Society on Social Implications of Technology celebrating half century commitment on social implications on technology.

This year, over 3 days ISTAS20212HK theme is focused on ‘Digital and Societal Transformations’, in which have been exemplified by our keynote speakers leading our daily plenaries, and 11 leading edge research paper tracks with contemporary themes and deliberations on crucial topics related to this year themes. As well as there are two co-located full day events with focus on social implications of national security and ethics.

A number of people have contributed to the success of ISTAS22HK and I would like to extend my heartfelt gratitude to:

All members in both of international and local organising committees, in particularly Prof. Gopal T V, as the technical chair, Dr Jay Pearlman for his endless support, encouragement and trust in me at organising committee and at the IEEE Society’s Board of Governors level.

The Conference Secretariats, Momentous Asia Travel and Events Co. Ltd. in Hong Kong, anonymous volunteers at Anna University in India, as well as many other people in different places and countries around the globe who reached out to offered helps and supports to ISTAS22HK.

All the keynote speakers and paper presenters who submitted their research papers, because without them there is no ISTAS22HK.

Finally, I want to thank our anonymous paper reviewers and session chairs, helpers too, because without their helps ISTAS22HK does not exist.

I hope you all enjoy this year conference even though is virtual – this may will be the last time and there is a good chance that we be saying goodbye to Covid-19 Global Pandemic. Lastly, I want to wish ISTAS2023 in Wales every success next year

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Dr. Clinton Andrews, President, IEEE SSIT
Dr. Luek Lun, President – E ICT, IEEE SSIT
Mr. Deepak Mathur, Director, IEEE R10
Dr. Lewis Terman, Past President, IEEE
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Dr. Laurie Lau, Chair, Conference Committee
Dr. T V Gopal, Chair, Technical Programme Committee
Dr. Lennon Chang, Chair, Finance Committee

For further information, contact us at:
istas22@momentousasia.com

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https://www.istas22.org/
ISTAS 22 CONFERENCE COMMITTEE

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Chair, Technical Programme Committee  
Anna University Chennai, India

Dr Lennon Chang  
Chair, Finance Committee  
Senior Lecturer, Criminology School of Social Sciences, Monash University, Australia

Advisory Committee

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Programme Committee

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<td>Akira Furui</td>
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<td>E-Governance and Internet Governance Foundation for Africa (EGIGFA)</td>
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<td>Zhong Sara Hua</td>
<td>Chinese University of Hong Kong</td>
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</table>

**Local Committee Members**

**Dr. Hua ZHONG, The Chinese University of Hong Kong**

Dr. Hua (Sara) Zhong is an Associate Professor at the Department of Sociology at The Chinese University of Hong Kong, an Honorary Research Fellow of Hong Kong Police College, and the newly elected Vice-Chairperson of the General Assembly for Asian Criminological Society. She has been a visiting scholar at Institute of Criminology, Cambridge University and Cybercrime Observatory, Australian National University. Her research and teaching interests include criminology, criminal justice, social development, and gender studies. Currently she has several ongoing projects on social change and trends of cybercrime and digital delinquency by gender and across cultures. Her publications have appeared in *Criminology, Journal of Research in Crime and Delinquency, Journal of Criminal Justice, Journal of Interpersonal Violence, Feminist Criminology, and Journal of Youth and Adolescence* etc.

**Dr. Tianji Cai, University of Macau**

Tianji Cai is an Associate Professor at University of Macau. He received his PhD degree at University of North Carolina at Chapel Hill in 2010. His research interests concentrate on new forms of data and new methods of analysis. Reflecting on his broad intellectual pursuits, his research topics are diverse, ranging from methodological, such as quantitative methods and data mining, to substantive ones, such as gene-environmental interplay and adolescent health behaviors. He has published widely in leading international journals including American Sociological Review, American Journal of Sociology, Demography, Sociological Methodology, Sociological Methods & Research, Chinese Sociological Review, etc.
Plenary Sessions

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<td>How can we land from the Cloud? A Story from Big Data to Digital Health</td>
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<td>Dr. Erol Gelenbe</td>
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Opening Session

Welcome to ISTAS 2022 | Dr. Laurie Lau, Conference Chair, ISTAS 2022
Presidential Address | Prof. Clinton Andrews, President, IEEE SSIT
Inaugural Address | Dr. Maxine Cohen, Professor Emeritus, College of Engineering and Computing, Nova Southeastern University, Florida, USA & IEEE SSIT Board of Governors – Education
Key Note Address | Dr. Luis Kun, A Glimpse of 2023 and Beyond
About the Programme | Dr. T V Gopal, Chair, Technical Programme Committee, ISTAS 2022
Vote of Thanks | Dr. Lennon Chang, Chair, Finance Committee, ISTAS 2022

Inaugural Address by Dr. Maxine Cohen, Professor Emeritus, Nova Southeastern University, Florida, USA

She teaches graduate courses (on campus and online) in Human-Computer Interaction, Interaction Design, and Social Media and advises doctoral students. Previously she worked for IBM (Endicott, NY and Boca Raton, FL) and taught at the Watson School of Engineering at Binghamton University. She has served as a meta-reviewer for ACM Computing Reviews for over 20 years. She earned her Ph.D. and M.S. from Binghamton University and her B.A. from the University of Vermont. She is a member of ACM, IEEE, and UPE.
Prof Saifur Rahman: A Portfolio of Technology Solutions to Achieve Global Decarbonization

Saifur Rahman is a professor of electrical and computer engineering at Virginia Tech. He is the founding director of the Advanced Research Institute at the university, which helps faculty members get access to research funding, government laboratories, and industry research centers. Rahman is also the founder and chairman of BEM Controls in McLean, Va., a software company that provides buildings with energy efficiency solutions.

He served as chair of the U.S. National Science Foundation Advisory Committee for International Science and Engineering from 2010 to 2013.

Rahman is the founding editor in chief of the IEEE Electrification Magazine and the IEEE Transactions on Sustainable Energy.

He served as the 2018–2019 president of the IEEE Power & Energy Society (IEEE PES). While president, Rahman established the IEEE PES Corporate Engagement Program, which allows employers to receive IEEE benefits by paying their employees’ IEEE membership dues.

Prof. Kelvin KF Tsoi: How can we land from the Cloud? A Story from Big Data to Digital Health

Abstract:

Big Data is a popular concept to encourage an efficient way to extract, analyze and interpret a huge volume of data which may come with uncertainty. However, the applications of big data may be in different ways of interpretation across the academic disciplines from computing engineering, medicine, and social sciences. The research topics cover data visualization, machine learning and artificial intelligence, but are not limited to the risk prediction models on electronic health records. Compared with traditional electronic health records, there are many new forms of health data that can be used for better health management. For examples, walking steps and heart rate variability can be captured by a wearable device. Although data quality from different types of wearable devices may not be guaranteed, data intensity from day-to-day records can give a new insight into the health status of an individual. Personalized health data will play an important role in the future use of preventive medicine and public health research. Therefore, digital health is an emerging public health area encompassing digital technologies and services that empower people and populations to manage health and wellness. It does not just focus on the size of data, but also leverages on the computing, software, sensors, programming algorithms with the aim to provide strengthening of population health. In this lecture, the speaker will present his own experience of learning the interdisciplinary language from medicine to engineering, and also from Big Data to Digital Health. He will also share his entrepreneurship experience of how to engage participation from the community for better health management.

Biography:

Dr. Kelvin Tsoi is an Epidemiologist and a Data Scientist. He received his Bachelor degree in Statistics and Doctoral degree in Medical Sciences in the Chinese University of Hong Kong. He also received clinical research training in the Department of Medicine and Therapeutics, and was responsible for the colorectal cancer prevention project. Before his current position, he worked as a research scientist in the statistical department of Hospital Authority (HA). He led projects covering a wide range of challenging areas on chronic diseases, such as service demand projection for schizophrenia and dementia. The experience of database management enhanced his understanding of the HA database structures and also the potential research topics.

His research focus is on Digital Health, which is the application of real-time mobile or social digital data for improving public health or reducing future disease burdens. The application of Artificial Intelligent to Big Data research is also his interest. Recent research covers digital dementia screening and machine
learning on blood pressure variability. He has published over 50 full scientific articles in the foremost journals. A recent paper to compare dementia screening was published in JAMA Internal Medical. His work on Big Data was presented in the Institute of Electrical and Electronics Engineers (IEEE) international conferences.

Mr Grady Booch: Computing the Human Experience – Technology & Social Perspectives

Grady Booch is Chief Scientist for Software Engineering at IBM Research where he leads IBM’s research and development for embodied cognition. Having originated the term and the practice of object-oriented design, he is best known for his work in advancing the fields of software engineering and software architecture. A co-author of the Unified Modeling Language (UML), a founding member of the Agile Alliance, and a founding member of the Hillside Group, Grady has published six books and several hundred technical articles, including an ongoing column for IEEE Software. Grady is also a trustee for the Computer History Museum. He is an IBM Fellow, an ACM and IEEE Fellow, has been awarded the Lovelace Medal and has given the Turing Lecture for the BCS, and was recently named an IEEE Computer Pioneer. He is currently developing a major trans-media documentary for public broadcast on the intersection of computing and the human experience.

https://computingthehumanexperience.com/

Dr. Mei-Po Kwan: The Uncertain Geographic Context Problem

Mei-Po Kwan is Choh-Ming Li Professor of Geography and Resource Management and Director of the Institute of Space and Earth Information Science at the Chinese University of Hong Kong. She received her MA degree in Urban Planning in 1989 from the University of California, Los Angeles (UCLA) and her PhD in 1994 in Geography from the University of California, Santa Barbara (UCSB).

Kwan has made ground-breaking contributions to research on environmental health, human mobility, transport and health issues in cities, and geographic information science (GIScience). She discovered the uncertain geographic context problem and the neighborhood effect averaging problem. She is a leading researcher in deploying real-time GPS tracking and mobile sensing to collect individual-level data in environmental health research. Her recent projects examine the health impacts of individual environmental exposure (e.g., noise, air pollution, green space), the protection of geoprivacy via the development of a Geospatial Virtual Data Enclave (GVDE), and the space-time dynamics of the COVID-19 pandemic.

Kwan is a Guggenheim Fellow and a Fellow of the U.K. Academy of Social Sciences, the American Association for the Advancement of Science (AAAS), and the American Association of Geographers (AAG). She was named to the 2019 Highly Cited Researchers List compiled by the Web of Science Group as one of the world’s most influential researchers. She has received many prestigious honors and awards, including the Distinguished Scholarship Honors, the Wilbanks Prize for Transformational Research in Geography, and the Stanley Brunn Award for Creativity in Geography from the AAG.

Kwan had served as an editor of Annals of the American Association of Geographers for 12 years. She has received over US$58.5 million grant support from sources including the U.S. National Institutes of Health, the U.S. National Science Foundation, the U.S. Department of Transportation, the National Natural Science Foundation of China, and the Hong Kong Research Grants Council. She has published over 330 books, journal articles and book chapters. She has delivered over 340 keynote addresses, invited lectures and other invited presentations in more than 20 countries.
Dr Erol Gelenbe: Energy Consumption by ICT: Facts and Trends

Erol Gelenbe—Fellow IEEE’86, Fellow ACM’02, Fellow of the Royal Statistical Society, Honorary Fellow of the Islamic World Academy of Sciences, Fellow of the French National Academy of Technologies, the Royal Academy of Belgium, the Science Academies of Hungary, Poland and Turkey, and of Academia Europaea—is known for pioneering computer performance analysis, and inventing the Random Neural Network and its gradient and deep learning algorithms. Awarded the $500,000 Mustafa Prize for inventing Gelenbe-Networks that model both data networks and neural networks, he graduated 95 PhD students according to the American Mathematical Society Mathematics Genealogy Project.


1979-1986 he chaired the French Chapter of the IEEE Computer Society, served as IEEE Communications Society Distinguished Lecturer for two terms and is now Distinguished Visitor of the IEEE Computer Society. Former Chair of Duke University’s Electrical and Computer Engineering Dept., University Chair professor and Director of EECS at UCF, New Jersey State Endowed Chair Professor at NJIT, at Imperial College London, he was Dennis Gabor Professor and Head of Intelligent Systems and Networks. In France and Belgium he was a chaired professor at the University of Liege, the Universities of Paris-Saclay and Paris-Descartes.

His honors include Chevalier de la Legion d’Honneur (France), Commander of Merit of both France and Italy, and Grand Officer of the Order of the Star of Italy. He is currently Professor in the Institute of Theoretical and Applied Informatics of the Polish Academy of Sciences, Honorary Professor at the University of Electronic Sciences and Technology of China, and other institutions.

In celebration of SSIT’s 50th Anniversary

Moderator: Dr. Luis Kun

Panelists:
Banu Onaral, PhD, H. Sun Professor, School of Biomedical Engineering and Electrical Engineering, & Senior Presidential Advisor, Global Innovation Partnerships, Drexel University, Philadelphia, PA USA

Banu Onaral earned her PhD in Bioengineering from the University of Pennsylvania. Her academic focus both in research and teaching is centered on information and systems engineering with special emphasis on complex systems, biomedical signal processing and functional optical brain imaging. She founded several laboratories and launched the CONQUER (Cognitive Neuroengineering and Quantitative Experimental Research) CollabOrative, an interdisciplinary brain health and cognitive function observatory in 2008.

Dr. Onaral led the translational research initiative for rapid commercialization of biomedical technologies developed at Drexel University. The program has been awarded the Coulter-Drexel Translational Research Partnership Endowment in 2011. She currently serves
as the Senior Presidential Advisor for ‘Global Innovation Partnerships’ at Drexel University and leads the development of the Global Innovation Partnership endowed program created under her name.

She served as the founding dean of the School of Biomedical Engineering, Science and Health Systems from 1997 until 2015. Throughout her career, she actively forged international academic and translational research partnerships with universities as well as science and technoparks, primarily in China and Turkey.

**Dr. Rakesh Kumar**, President and CEO | TCX Technology & IEEE Past President (2012-13) Solid-State Circuits Society

Dr. Rakesh Kumar is Founder, President and CEO, TCX Technology Connexions, as well as Entrepreneurship Advisor & Educator, Univ. of California, San Diego. TCX Technology Connexions provides management, business, and technical ‘bridging the gaps’ consulting services in advanced semiconductor technology and virtual operations areas. Clients include emerging fabless IC companies, mid-size and large, Fortune 500 IC companies, and leading research organizations.

Dr. Kumar is an IEEE Life Fellow and has been an active volunteer since the late 1980s. He is Past President (2012-13) of the IEEE Solid-State Circuits Society. His global outreach efforts increased Society Memberships and resulted in a 15% growth in SSCS Chapters. He serves as a Region Governor for the IEEE honor society, HKN.

Dr. Kumar currently serves as a Business and Technology Advisor at University of California San Diego’s Entrepreneurism Center. He teaches a very popular course that provides experiential education, encouragement and coaching in entrepreneurship.

During his 40 years career in the semiconductor industry, Dr. Kumar has been the VP&GM of Cadence Design’s worldwide Silicon Technology Services business unit, and has held various technical and management positions at Unisys and Motorola.

**Dr. Cecilia Metra**, 2019 IEEE Computer Society President, 2022-2023 IEEE Division V Director

Cecilia Metra is a full professor and the Deputy-President of the Engineering School at the University of Bologna, Italy, where she has worked since 1991, and from which she received a PhD in electronic engineering and computer science. In 2002, she was visiting faculty consultant for Intel Corporation.

She is IEEE Director /Division V Delegate 2022-2023. She was the 2019 President of the IEEE Computer Society (CS).

She is the Chair of the ICT working Group of the IEEE European Public Policy Committee (2021-present), and a member of the IEEE Award Committee (2022), IEEE Diversity & Inclusion Committee (2022), IEEE Young Professionals Committee (2021-2022), the IEEE European Public Policy Committee (2020-present), the IEEE Smart Village Governing Board (2020-present), the Systems Council Advisory Committee (2020-present), the IEEE Conferences Committee (2021-2024). She was a member of the IEEE TAB/PSPB Products and Services Committee (2020). She is the Co-Founder and Vice-Chair of the IEEE Computer Society Special Technical Community on “Reliable, Safe, Secure and Time Deterministic Intelligent Systems”, and the Co-Chair of the IEEE Digital Reality Initiative Project on the same topic.

She was the Editor in Chief of the IEEE Transactions on Emerging Topics in Computing (2018, 2020), the Editor in Chief of Computing Now (2013-2016) and the Associate Editor in Chief of IEEE Transactions on Computers (2007-2012).

She contributed to numerous IEEE international conferences/symposia/workshops as general/program chair/co-chair (15 times), vice-general/program chair/co-chair (6 times), topic/track chair (34 times), technical program committee member (100+ times), and keynote/invited speaker/panelist (40+ times).

She has published extensively (190+ papers on peer reviewed Journals and Conference Proceedings) on test and design for test of electronic circuits/systems, reliable, safe and resilient electronic circuits/systems, trustworthy artificial intelligence, fault tolerance, error correcting codes, secure communication protocols, photovoltaic and energy harvesting systems, emerging technologies.
Her research has received public and private funding (e.g., from the EU, the Italian MISE and MIUR Ministries, and from companies such as Intel Corporation, STMicroelectronics, Alstom Transport, etc.) at national and international levels.

Cecilia Metra is an IEEE Fellow, IEEE CS Golden Core Member, and a member of the IEEE Honor Society IEEE-HKN. She has received two Meritorious Service Awards and six Certificates of Appreciation from the IEEE CS, and the 2020 Spirit of the Computer Society award.

### Closing Session

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<tr>
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<td>Presentation on ISTAS 2023</td>
<td>Dr. Denis Dennehy, Conference Chair, ISTAS 2023; Swansea University, Wales, UK</td>
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<td>Thank You</td>
<td>Dr. Laurie Lau, Conference Chair, ISTAS2022</td>
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<td>Track 1 (Kaleidoscoping Data)</td>
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<td>Track 2 (Integrated Digital Healthcare)</td>
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<td>Track 3 (5G Technologies with a Lite Touch on 6G)</td>
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<td>Track 5 (Transformational Achievers and Achievements)</td>
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<td>Track 6 (Voices of the End-Users)</td>
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<td>Track 7 (Town Hall on &quot;Internet Governance&quot;)</td>
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<td>Track 8 (Robotics and Automation)</td>
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<td>Track 9 (Bioengineering)</td>
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Advisory Committee
Prof. Greg Adamson, Chair, Advisory Committee
Dr. Jay Pearlman, Conference Chair, IEEE SSIT
Dr. Clinton Andrews, President, IEEE SSIT
Dr. Luis Kun, President – Elect, IEEE SSIT
Mr. Deepak Mathur, Director, IEEE R10
Dr. Lewis Terman, Past President, IEEE
Dr. Robert Dent, IEEE Foundation

Organizing Committee
Dr. Laurie Lau, Chair, Conference Committee
Dr. T V Gopal, Chair, Technical Programme Committee
Dr. Lemon Chang, Chair, Finance Committee

For further information, contact us at:
istas22@momentousasia.com
| Track 10 | 2:30PM - 4PM HKT | Prof. Greg Adamson |
| Track 11 | 1PM - 2:30PM HKT | Prof Joseph Sarkis |
| Social Choice and Decision Complexity | 5AM - 6:30AM UTC | Co Lead: Dr. Sundarraj R P |
| ETHICS DAY | Nov 12, 2022 | Chair: Prof. Greg Adamson |
Track 1: Kaleidoscoping Data

| 10th Nov 2022 | 1PM-2:30PM [HKT]/5AM-6:30AM [UTC] | Session #1: Keynote: Dr. Tianji Cai  
Title: Periodicity of Sex Worker Touring: An Image Assisted Analysis  
Paper Presentations |
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<td>11th Nov 2022</td>
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<td>Session #2: Round Table: Responsible Trading of Human-Generated Data</td>
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| 12th Nov 2022 | 1PM-2:30PM [HKT]/5AM-6:30AM [UTC] | Session #3: Keynote #1: Visualization through Data Mining  
Keynote #2: Visualization using R |

Track Lead: Prof Valentina E Balas  
Track Co-Lead: Prof Tianji Cai

Session #1:

Keynote: Dr. Tianji Cai  
Title: *Periodicity of Sex Worker Touring: An Image Assisted Analysis*

Tianji Cai received his PhD degree at University of North Carolina at Chapel Hill in 2010. Prior to joining University of Macau, he has worked in University of North Texas for two years. His research interests concentrate on new forms of data and new methods of analysis. Reflecting on his broad intellectual pursuits, his research topics are diverse, ranging from methodological, such as quantitative methods and data mining, to substantive ones, such as gene-environmental interplay and adolescent health behaviors. He has published widely in leading international journals including American Sociological Review, American Journal of Sociology, Demography, Sociological Methodology, Sociological Methods & Research, Chinese Sociological Review, etc.

**Paper Presentations**

- Hua Zhong and Aikins Amoako Asiama, Cyberfraud among Ghanaian youth: Routine Activity, Differential Association, Space Transition, and Social Exchange
- Simone Herbert-Lowe, Payment redirection fraud – who does (and who should) bear the loss in fraudulent banking transactions, and is Australia’s electronic banking system fit for purpose?
- David Kolevski, Katina Michael, Roba Abbas and Mark Freeman, Cloud Computing Data Breaches in News Media: Disclosure of Personal and Sensitive Data
- Akiko Orita, “Resurrecting” dead celebrities: Editing and using remnant data of the deceased through AI
- Rasika Bhalerao and Damon Mccoy, An Analysis of Terms of Service and Official Policies with Respect to Sex Work

Session #2: Roundtable Theme: Responsible Trading of Human-Generated Data

The Working Group for IEEE P2895™ organizes the “Responsible Trading of Human-Generated Data” roundtable to open ongoing internal discussions to a broader audience for more productive work. This roundtable has three tentative themes: 1) Is human-generated data personal property? 2) Which human-generated data can be traded? Which can not be traded? 3) How to address privacy concerns when trading human-generated data?
Participant Information

HASSAN AI SHAZLY, Ph. D.

Dr Shazly has over 40 years of varied progressive experience developing and managing computer system applications. His work experience has involved both the technical aspects of the development of scientific and business applications as well as the managerial aspects of the technology and its environment from its conceptualization through operations and retirement.

Dr Shazly’s work experience spans a variety of organizations including UNICOM, IBM, SC Dept of Juvenile Justice, Policy Management Systems, University of South Carolina and the Academy of Science (Egypt). For the past 30 years he has been engaging with an international/global customer base. Dr Shazly obtained his B.Sc. (Physics/Electronics) in 1975, his M.Sc. in Remote Sensing/Geographic Image processing) in 1982 and his Ph.D. (Remote Sensing/Digital Image processing) in 1988.

Dr Shazly has published: 16 Refereed Journal Articles, 14 Technical Reports and; 44 Conference Presentations and Publications and; 16 Patent Disclosures: (13 issued, 3 published)

Dr Shazly is a senior life member of the IEEE and a member of the IEEE Computational Intelligence Society.

Anthony Solomonides, PhD

Tony Solomonides is a Program Director at the NorthShore University HealthSystem Research Institute with focus on Outcomes Research and Biomedical Informatics. In this role, he has led informatics efforts in two major Chicagoland clinical research networks. He has also been active in the National Covid Cohort Collaborative (N3C) with a particular interest in Social Determinants of Health. He has also contributed to the development of analytic models and studies of wearable technologies at NorthShore. Dr. Solomonides has also been a regular contributor to broader informatics activities in biomedical informatics, including the development of maturity models, ethics, research data governance, privacy-preserving data linkage, and secure data sharing. In the context of an IEEE Standards Working Group on Organizational Governance of AI, he has developed a case study building on the idea of health record banking to consider the implications of an AI-managed Smart Personal Health Record.

Andrew McStay, Ph. D

Andrew McStay is Professor of Technology and Society at Bangor University, UK. His most recent book, Emotional AI: The Rise of Empathic Media, examines the impact of technologies that make use of data about affective and emotional life. Director of The Emotional AI Lab, current projects include cross-cultural social analysis of emotional AI in UK and Japan. Non-academic work includes W3C and IEEE membership (P7000/7014 and P7030) and ongoing advising roles for startups, NGOs, and policy bodies. He has also appeared and made submissions to the United Nations Office of the High Commissioner on the right to privacy in the digital age, the UK House of Lords AI Inquiry and the UK Department for Culture, Media and Sport Inquiry on emotion, news, and reality media.

Angelo Ferraro

Angelo Ferraro currently holds Research Fellowship and Research Assistant positions as well as a PhD Candidacy, subsequent to being an Instructor of Record in the Department of Electrical Engineering, at the University of South Carolina. He holds a Master of Engineering in Electrical Engineering (Power Device Physics,) a B.S. in Electrical Engineering (Instrumentation,) and a B.S. in Civil Engineering (Structures and Material Science,) and extensive post graduate studies in Biomedical Engineering.

His experience includes Visiting Scientist with the Office of Naval Research as a technology transfer expert, and the Department of Energy program consultant, in addition serving in research, executive, and managerial positions at several startups through medium sized companies, as well as the multinationals: Harris Semiconductor, PR&D Laboratory, and General Electric Corporate R&D Center. Also successfully served for several years as an industry turn-around consultant to faltering second stage companies. A keen
proponent in smart energy and distributed control, including some of the first Artificial Intelligence (AI) applications.

His current research interests are nature-inspired architecture and control of large systems, i.e., smart cities, smart grids, and societal application. A natural outcome of these efforts is the need to promote engineering ethics in these transformational AI and Machine Learning technologies. Awards include R&D-100 publications, republished in IEEE text. This work consists of service on standards, technology, and educational development committees and currently serves on several working groups and IEEE Societies, including Chair of the IEEE P2895 Responsible Trading of Human Generated Data Working Group, and Vice Chair of the IEEE IC22-006 Best Practice Guide to Developing Ethically Aligned Standards.

Lubna Dajani

Lubna Dajani is an award-winning futurist, pioneer systems, and design thinker. She draws on her work with AI, sensors, biotech, security, identity, DLTs, and other exponential technologies to navigate the future of work, society, and human potential. On her journey to becoming a leader in transformative tech, she served as an innovation executive for major brands, including GE, Viacom, Microsoft, Nokia, and PwC.

Lubna is committed to the application of STEAM innovations, design thinking, change theories, and indigenous wisdom to solving the world’s most pressing environmental and socioeconomic challenges. She is a member of the Catalyst 2030 US leadership team and was a founding member and secretary of multiple game-changing cross-sectoral collaborations, including the Wireless Internet Caucus, and the Open Trust Protocol Alliance.

Lubna is an active contributor to numerous IEEE ethical AI standards, Sovereign Foundation, and a W3C Invited Expert on Privacy. She continues to serve as an Advisory Board member for Horizon 2020 NGI Trust and several grassroots nonprofits. Lubna also serves as a mentor to startups and venture funds including SOSV.

Ning An, Ph. D.

Ning An has a Ph. D. in Computer Science and Engineering from the Pennsylvania State University, USA, and is a Fellow of The International Academy of Health Sciences Informatics (FIAHSI) and an IEEE Senior Member. Dr. An is the founding director of HFUT Gerontechnology Lab, the first of its kind in mainland China. “Toward Better Understanding Older Adults: A Biography Brief Timeline Extraction Approach” is his recent paper on utilizing life stories with NLP technologies to gain a deeper understanding of older adults. In addition to publishing more than seventy papers in leading international journals (including VLDBJ and TKDE) and top international conferences (including KDD, VLDB, ICDE, and WWW), Dr. An published two books and wrote four granted US patents and eighteen Chinese granted patents.

Session #3: Keynote Speeches

Keynote #1: Visualization through Data Mining

Mohd Helmy Abd Wahab is a senior lecturer and former Head of Intelligent System Lab at the Department of Computer Engineering, Faculty of Electrical and Electronic Engineering, Universiti Tun Hussein Onn Malaysia (UTHM). He has actively involved in many academic activities such as being invited speaker at ICRITO 2015 (India), IPIARTI 2015 (UTP), IPIARTI2014 (UNIMAP) and IPIARTI 2012 (UiTM). He hold several research grants, won several medals in research and innovation showcases and awarded several publication award and teaching awards. He has authored and co-authored 2 books in database system (2013) and this book received consolation prize by Society of Science and Mathematics Malaysia (PESAMA) in 2014 and WAP application (2009), published several both local and international book chapters (11), technical papers in conferences and peer-reviewed journals (>100) papers. He also involve in publishing articles in periodicals such as newspaper (Utusan Malaysia) and national magazine (Dewan Kosmik). He also served as guest editor for Special Issue in Wireless and Mobile Networks in International Journal of Advanced Computer Science and Applications.
(2011) and as Deputy Editor in Chief for Int. Journal of Software Engineering and Computing since 2009 and scholarly contributed as committee for conferences, editorial team and manuscript reviewers and also invited to be session chair in conferences. Latest, he also invited to be Advisory Committee for ICACM 2016 at Pune, India, and Track Chair for IEOM 2016 in Kuala Lumpur. His research interests are in data mining, artificial intelligence and computer vision, mobile and wireless computing, web-based applications. He is currently an active member of IEEE, IEEE Computer Society, IAEng, IACSIT and PECAMP (Society of Info. Retrieval and Knowledge Management Malaysia) and as Associate Member for Embedded Computing Research Group (UTHM), BigData Center (UTM), MySigBigData (UM), E-Community Research Center (UKM).

**Keynote #2: Visualization using R**

Husna Sarirah Husin is a Senior Lecturer at Universiti Kuala Lumpur, Malaysian Institute of Information Technology (UniKL MIIT) since 2005. She obtained her PhD in 2021 from RMIT University, Australia. Her PhD is investigating the user behaviour on online news website using the web server logs. Besides teaching, she is a Research Coordinator, CWAL (Centre for Women Advancement & Leadership) coordinator, and Process Mining (PMineRec) Research Cluster Leader in UniKL MIIT. She has received both internal and external university funding, taken part in research initiatives for industries, and been granted national funds. Her research interests are in the area of Web Mining, Process Mining, Data Analytics, Data Mining and Visualization.
## Track 2: Integrated Digital Healthcare

**Track Lead:** Dr. Luis Kun

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<th>Date</th>
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<th>Session #1: Telemedicine systems for integration of health services during crisis and disasters</th>
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<td>10th Nov 2022</td>
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### Session #1: Telemedicine systems for integration of health services during crisis and disasters.

**Chair:** Dr. Francesco Sicurello, President of @ITIM, Italian Association on Telemedicine and Medical Informatics; National Research Council-Institute of Biomedical Technologies, Milan; Health Directorate, Lombardia Region

Francesco Sicurello is the Professor and President of Health Informatics in Milano, Lombardia, Italy. He is also the President of IITM [International Institute of Tele-Medicine], Coordinator of University Technological Centre in Desio-Monza, professor at the University of Milan, Macerata, Como and Milan Bicocca.

Prof. Sicurello is a physicist (specialized in Cybernetics) having several years of experience in Medical Informatics and Telemedicine. He served as computer scientist, responsible at Desio Hospital for development of the epidemiological and medical information systems and researcher in clinical informatics and software for data analysis in medicine at Policlinic Hospital in Milan, before taking the lead of the Medical Informatics Unit at the Institute of Biomedical Technologies of Milan (National Council of Research).

**Francesco Sicurello** (President of International Institute of Tele-Medicine, Italian National Council of Research, Milan); **Giuseppe (Joseph) Tritto** (President of WABT, France)

**Introduction of chairs on:**

**Telemedicine in monitoring and rehabilitation; Artificial Intelligence and Digital Open Health**

Communications of:

**Martin Zizi,** Belgium & USA

**Matteo Botteghi,** University of Bologna, Italy, , Luca Neri , Johns Hopkins University, Baltimore, USA & University of Bologna A, Antonio Augello, Accyourate, Italy

**Alice Karoubi-Nordon,** France

**James Goldberg,** USA & France

**Mateja Leoni Stanonik,** USA & Slovenia

**Pal Miletics,** Hungary
Session #2: Integrated Intelligence: Complementing Human and Artificial Intelligence for a better health care

Chair: Dr. Parag Chatterjee

Dr Parag Chatterjee works as professor at the National Technological University in Buenos Aires, Argentina and at the Department of Biological Engineering at the University of the Republic, Uruguay. He has obtained his BSc and MSc in Computer Science from the University of Calcutta, followed by a PhD from the National Technological University, Argentina. His current research is focused on the transdisciplinary areas of Internet of Things and Artificial Intelligence applied to healthcare, especially in the domain of prediction and prevention of cardiometabolic diseases. In addition to serving as editor in several international journals in the area of health informatics, Dr Chatterjee has delivered invited talks and keynotes in international conferences and events like ExpoInternet LatinoAmérica, TEDx, IoT Week Geneva, and in institutions like the Indian Institute of Science (IISc) Bengaluru, India and University of Rome II, Italy.

Paper Presentations

- Christian Herzog, Inexplicable AI in Medicine as a Form of Epistemic Oppression
- Jordan Richard Schoenherr, The New Folk Medicine: Vaccination, Values, and Health Information Search Behaviour
- Noeline Prins, Rebecca Monteleone, Joana Soldado-Magraner, Joanne Nash, Michael J. Young and Laura Cabrera, Reexamining the ethical, legal, social, and cultural implications for cochlear implants through a novel neuroethics framework

Session #3: Paper Presentations

Chair: Joaquin Azpiroz Leehan

Joaquin Azpiroz Leehan obtained his B Sc and M Sc in Biomedical Engineering from Universidad Autónoma Metropolitana (UAM) in Mexico City in 1980 and 1986. He earned his Ph. D. in Biomedical Engineering from the Université de Technologie de Compiègne, France in 1992. He is currently Professor of Biomedical Engineering and Scientific Coordinator at CI3M, a National Laboratory for Medical Imaging and instrumentation at UAM. He has worked on many different facets of Biomedical Engineering: from designing and building custom instrumentation for physiological & biophysical experiments, hardware-based signal processing systems, image processing, and the design and development of medical devices. Another field has been MR imaging (structural and functional), with special emphasis is on effects of environmental and workplace inhalation of pollutants and solvents. Another important interest has been BME Education.

- Rua Williams, “Only the Old and Sick Will Die” – Reproducing ‘Eugenic Visuality’ in COVID-19 Data Visualization
# Track 3: 5G Technologies with a Lite Touch on 6G

**Track Lead:** Dr. T V Ramachandran

## Preliminary Programme

The time shown is HK Time. Please refer to [Program Page](https://www.istas22.org/) for session timing and please double check your local time before attending the session.

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<th>Time</th>
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| 9PM-10:30PM [HKT] / 1PM - 2:30PM [UTC] | **5G Technologies with a Lite Touch on 6G**<br><br>**T V Ramachandran** – Program Lead – Introductory Theme<br><br>**Address**<br><br>**Sub Theme: The Future of Connectivity**<br><br>**Chair of the Session:** Prof Bhaskar Ramanurthi, IIT M<br><br>IEEE Founders Address – Mr. Narendra Mangra, Principal at GlobeNet LLC & Co-Chair; IEEE Future Network Applications and Services<br><br>• Mr Nicolas Chuberre, Solution Line Manager, Thales Alenia Space & Rapporteur of the standardisation on satellite in 5G for the 3GPP TSG RAN , Toulouse, France*<br><br>• Mr Håkan Ohlén, Director, Spectrum and Radio Technology Strategy, Ericsson & Chairman, Adhoc Work Plan Group, ITU -WP 5D , Hanoi, Vietnam*<br><br>• Mr. Stuart Cooke, Director Regulatory & Industry Affairs, Samsung and Chair, Global Spectrum Team, GSA - United Kingdom*

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| 9PM-10:30PM [HKT] / 1PM - 2:30PM [UTC] | **5G Technologies with a Lite Touch on 6G**<br><br>**Sub Theme – The evolution of Mobile Networks**<br><br>**Chair of the Session:** Dr Mike Short, CBE, DIT Chief Scientific Adviser, Government of the United Kingdom<br><br>• Mr. Adrian Scrase, CTO – 3GPP, ETSI<br><br>• Prof. Abhay Karandikar, Director IIT K<br><br>• Dr R K Upadhyay, Executive Director, CDoT

### 12th Nov 2022

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| 9PM-10:30PM [HKT] / 1PM - 2:30PM [UTC] | **5G Technologies with a Lite Touch on 6G**<br><br>**Sub Theme – Device evolution with 5G and 6G**<br><br>**Chair - Prof Kiran Kuchi, Professor, IIT Hyderabad and Founder WiSig Network**<br><br>• Mr Mohan Rao Goli, Corporate Vice President & CTO, Samsung Research Institute,<br><br>• Mr. Adesh Jain, Wireless Applications Specialist, Keysight Technologies<br><br>• Mr. Vinosh Babu James, Director, Technical Standards, Qualcomm
Track 4: UN SDGs and Basic Sciences

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<td>Session #3:</td>
<td>Keynote Speaker: Sampathkumar Veeraghavan</td>
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Track Lead: Dr. Anandi Giridharan & Dr. Shaikh A. Fattah

**Session #1: Seeking Positive Impacts of Technological Advancements On The Climate And The Society**

Chair: Prasanta K. Ghosh, Professor, College of Engineering & Computer Science, Center for Science and Technology, Syracuse University, Syracuse, NY

The industrial revolution has brought tremendous gains in technological advancement and society’s prosperity. It is also true that technology could be a double-edge sword that can both do and undo damage to the environment. So, it is time to start a discussion on how technological advancements can positively impact our life and society. In this proposed session we will select invited and contributed presentations on positive impacts of technology on the environment and society. Presentations will include technological damage minimization, for example manufacturing with reduced wastage and reduction in toxic gas discharge, along with positive aspects of information availability and public health improvements.

Paper Presentations:
1. Cris Greer, Prioritizing Inclusion in Urban Development
2. Rebecca Dziedzic and Ketra Schmitt, Social Vulnerability In The Context Of Water Infrastructure Management
3. Saurabh Biswas, Chrissi Antonopoulos, Tim Seiple, Craig Bakker, Michael Walsh and Andre Coleman, Developing a Sustainability Tracking Framework and Proposing Indicators for Modeling Sustainable Bioenergy Projects”
4. Prasanta Ghosh, Danielle Smith, Lee McKnight and Mathin Torto The Internet Backpack: Transforming STEM Education, Agriculture and Economic Development in Liberia, West Africa
5. Yusuke Kaneko, Electricity Consumption and Environmental Impact Reduction Measures in Public Blockchain
6. Matteo Mantovani and Carlo Combi, FARmAPP: a process-driven solution to prevent and oppose illegal recruitment in agriculture in Northern Italy

**Session #2: Space Exploration and Sustainable Development**

Project Site
https://interplanetary.asu.edu/space-exploration-and-sustainable-development/

Abstract
This study seeks to understand how the space industry impacts the United Nations’ Sustainable Development Goals (SDGs). Using the SDGs as a guiding precept, a rapid review of each individual SDG and relevant space industries was conducted to assess the impacts of space exploration and the global
goals. A rapid review is a type of meta-analysis which provides a similar type of analysis as a traditional systematic review, but with constraints that make it useful for accelerated analysis and the analysis of emerging research topics. For this study, the question of interest was, “How does space exploration intersect with the UN’s SDGs?” Preliminary findings of this study show evidence of four prominent spheres of impact between space technologies and the SDGs: (1) remote sensing and earth observations satellite data are central to monitoring, modeling, and policymaking around the SDGs, (2) Extra-terrestrial conditions (microgravity, near-perfect vacuum, etc.) offer new manufacturing and energy generating capabilities, (3) spinoff technologies and technology transfers from space exploration activities often find terrestrial applications and finally (4) many articles discuss the possible societal implications of space technologies.

**Madison Macias**

Madi is a graduate research assistant at Arizona State University. She received her BS in Mechanical Engineering in 2021 and is presently completing an MS in Urban and Environmental Planning. Her research focuses on global development and social responsibility within space industries. Concurrent research includes studying environmental and social justice within engineering applications. She plans to focus on sustainable development within cities post-graduation.

**Eric Stribling**

Dr. Stribling is a faculty lecturer within the Interplanetary Initiative at Arizona State University, where he leads a research group studying global development and social responsibility within space industries. He holds a MS in Mechanical Engineering from Georgia Tech and a PhD in Global Development from Arizona State University. Prior to coming to Arizona, he taught as a professor of mechanical engineering at l’Universite des Montagnes in Bangangte, Cameroon. His research interests focus on how technology development intersects with societal wellbeing.

**Sarthak Bhardwaj**

Sar is a sophomore in the BS Aerospace Engineering program at Arizona State University and has always had a passion for the study of rockets and space. While continuing his education he hopes to engage with work on propulsion engineering.

**Tasha Coelho**

Tasha is a sophomore pursuing a BS in Earth & Space Exploration, with a focus on exploration systems design at Arizona State University. While continuing her education, she plans to help conduct research in extreme environments particularly in the field of analog astronauts.
Malaika Malik

Malaika is a senior in the BS Chemical Engineering program at Arizona State University and currently utilizes her engineering education within interdisciplinary and technical research work. After graduation she hopes to continue engaging with global sustainability projects to promote a standard integration of environmental and social justice within STEM work.

Bo Manuszak

Bo is a senior in the BS Aerospace Engineering program at Arizona State University. He engages with research and STEM education via his current role as a NASA Undergraduate Research Intern. He worked previously as an Aerospace Engineer Intern at Textron Systems, and will be working at Bell Helicopter while completing his MS in Aerospace Engineering.

Session #3: “Global School Connectivity Initiative.”

Speaker: Sampathkumar Veeraghavan, Global Chair, 2021 IEEE Humanitarian Activities Committee

Sampathkumar Veeraghavan is a globally renowned technologist best known for his technological innovations in addressing global humanitarian and sustainable development challenges. As the 2021 IEEE Humanitarian Activities Committee (HAC) Chair, Sampath spearheads the global strategy and portfolio of sustainable development and humanitarian engineering programs to deliver impactful programs at grass root-level. Sampath was the 2019-2020 IEEE SIGHT Chair, leading the program to record-breaking growth through high-impact, technology-driven sustainable programs benefiting members in 117+ countries. He is the founding chair for the IEEE SIGHT day (2020) and SIGHT week (2019), a global program that showcases the impactful IEEE technology-based humanitarian programs. Sampath was an expert in the Broadband Commission working group on school connectivity co-chaired by UNESCO, UNICEF and ITU to drive “GIGA,” a Global School Connectivity Initiative. He is the founder and president of “The Brahmam,” a humanitarian program delivering next-generation social innovations to achieve sustainable development goals and benefit marginalized communities globally. Sampath was recently accredited with the 2020 IEEE Theodore W. Hissey Outstanding Young Professional Award. He currently works as a senior technology and program management leader with Alexa Artificial Intelligence Group at Amazon.

Paper Presentations:

- Jessica C.M. Li, Applying virtual stories to enhance University students’ learn-to-learn competence for practicum preparation: an empirical exploratory study
- Alycia de Mesa, From Responsible Innovation to Interrelational Technology Development
- Justin Colyar, Katina Michael, Ross Maciejewski and Luke Tate, Improving Educational Standards Using Visualization Dashboards for Decision Making
Track 5: Transformational Achievers and Achievements

12th Nov 2022
10:30PM-12:00 Midnight [HKT] / 2:30PM - 4PM [UTC]

Session: #1: What has and has not changed in 50 years?

Track Lead: Clinton Andrews

Session #1: What has and has not changed in 50 years?

This panel session brings together present and past SSIT leaders to discuss how the salient issues have changed—or not—over a half century. These distinguished former SSIT Presidents will draw on their experiences in leading the Society through challenging internal episodes and external dramas to suggest what the next fifty years might bring. Expect both serious and hilarious moments.

Clinton Andrews, 2002-2003 and 2021-2022 SSIT President

Laura Jacobs Edelson, 2013-2014 SSIT President

Ronald Kline, 1991-1992 SSIT President

Toni Robbi, 1972-1973 CSIT Chair, 1987-1988 SSIT President
Track 6: Voices of the End-Users

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<td>Keynote #1: &quot;FLOSS and User Case Studies in India&quot;</td>
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**Session #1:**

Keynote: “User Experiences with IEEE DataPort”

Speaker: Melissa Handa, Senior Program Manager, IEEE DataPort

Melissa Handa is a Program Director within Technical Activities at the IEEE and is responsible for the strategic and operational leadership of IEEE DataPort™ and the IEEE Resource Centers. IEEE DataPort is a data platform designed, developed and implemented by IEEE which enables members of the global research community to store, access, share and manage their datasets. IEEE DataPort is an easily accessible data platform that enables users to store, search, access and manage datasets across a broad spectrum of topics. Melissa has led the design, development and implementation of the platform and currently manages the platform which has over 2.8 million users globally. The IEEE Resource Centers are a collection of valuable technical content which is available to the global technical community. IEEE content including webinars, tutorials, conference presentations, interviews with experts, and eBooks are searchable and available 24X7 through the IEEE Resource Centers.

Prior to joining the IEEE, Melissa was an Executive Director in the telecommunications industry, employed by Ericsson, Telcordia Technologies, and Bellcore. Melissa’s career included significant contributions in the areas of network requirements development, network product testing and product certification. Melissa led a team of equipment engineering experts during the introduction of wireless telecommunications and the implementation of fiber optic networks which now support broader communication services including high-speed broadband and content distribution.

Melissa holds a Bachelor of Science (BS) degree in Biomedical Engineering from Marquette University and a Master of Business Administration (MBA) from the University of Wisconsin. She completed the
Executive Development Program at Bellcore as well as numerous other management courses. Melissa is married with two children and lives in New Jersey, USA.

Keynote: Significance of End User’s feedback on Sustainable technology Development
Speaker: Celia Shahnaz, Ph.D, Professor, Department of EEE, Bangladesh University of Engineering and Technology (BUET)

2022 IEEE Women in Engineering Committee Chair-Elect, 2023-24 IEEE Women in Engineering Committee Chair

Celia Shahnaz, SMIEEE, Fellow IEB, received Ph.D. degree from Concordia University, Canada and is currently a professor at, Department of EEE, BUET, Bangladesh since 2015.

She has been elected as 2022 IEEE WIE Committee Chair-Elect and she will serve as the 2023-2024 IEEE WIE Committee Chair. She has been appointed as 2022-23 Member, IEEE New Initiative Committee, 2021-23 Chair, IEEE SPS Women in Signal Processing, 2021-23 Liaison between IEEE SPS and IEEE WIE. She has been appointed as 2021-22 Member, IEEE History Committee, Liaison between IEEE History Committee and IEEE WIE, 2021 Chair, IEEE WIE History Subcommittee and 2021-22 Member, IEEE Educational Activities Board Faculty Resource Committee.

She is the 2022 Member, IEEE WIE Strategic planning Committee, 2020-21 Member, IEEE WIE Senior Member Elevation Drive, and 2019-2021 Member, IEEE WIE WePower Subcommittee. She has served as an Editorial board member, IET Signal Processing From 2018 to date. She is the immediate past Chair, IEEE Bangladesh Section, Co-founder & Chair, IEEE EMBS, IAS, RAS, SSIT Bangladesh Chapters, & Vice-Chair, IEEE SPS Bangladesh Chapter, Founder and Advisor, WIE AG, and founder and Chair of SIGHT group FLASH, IEEE Bangladesh Section.

She is the recipient of the 2021 IEEE MGA Achievement Award, 2021 Inspiring Women in Academia Award from Bangladesh brand forum, 2019 R10 Humanitarian Activities Outstanding Volunteer Award, 2016 MGA Leadership Award 2015 WIE Inspiring Member Award, 2013 R10 WIE Professional Volunteer Award.

She has more than 21 years of experience (21 years as an IEEE volunteer) in leading impactful Technical, Professional, Educational, Industrial, Women Empowerment, Humanitarian Technology, Power and Energy-related Projects at national/international levels.

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**Session #2: Special Session: The Roles of Youth in Online Safety**

Organized by: E-Governance and Internet Governance Foundation for Africa
Moderator: Isaac Apenteng, Information Security Manager

Special Speakers:

Ouedraogo Wisdom, IT Officer

Wisdom OUEDRAOGO is an Information Security Officer. He is passionate about Ethical hacking, AI, Cyber Security and human’s online rights. A certified Fortinet NSE 3, ISC candidate, Certified Proofpoint on business Email Compromise. He is also a Network and Telecom Systems Engineer oriented cybersecurity. Wisdom is a Ghana School on Internet Governance (GhanaSIG) 2022 Fellow and a member of Internet Society of Burkina Faso. [https://www.linkedin.com/in/issouf-alan-wisdom-o-78363014](https://www.linkedin.com/in/issouf-alan-wisdom-o-78363014)
Faiza Seidu Adam, Information Security Auditor

Faiza Seidu-Adam is passionate about the importance of security and privacy for individuals and organisations because of the ever-increasing use of technology within personal and business endeavours. She is an Information Security Auditor with experience in compliance management, data protection and privacy, and vulnerability management. She is CompTia Security+ and ICSI-NSS Certified Network Security Professional and currently pursuing her masters degree in Information Security and Digital Forensics. She is a proud Ghana School on Internet Governance (GhanaSIG) 2022 Fellow.

Fiifi Mensah Selby, IT Analyst

Abraham Fifi Selby is an Information Technology specialist and digital analyst with ten years of experience working in the IT Support industry. He holds a BSc in ICT and has acted as Committee Vice Chairman for the Internet Society (ISOC) Ghana Chapter, and AMS for the Cybersecurity Special Interest Group (SIG) under ISOC Global. He is an Internet Governance Fellow at the Ghana School on Internet Governance (GhanaSIG), IndiaSIG, AFRISIG, and VSIG.

Isaac Apenteng, Information Security Manager

Isaac Apenteng is an Information Security Manager and passionate about cybersecurity and educating the public on how to stay safe online. He has a strong understanding of the implementation of international InfoSec standards like ISO 27001:2013 and PCI DSS. A proud Ghana School on Internet Governance (GhanaSIG) 2022 Fellow and a member of the Internet Society of Ghana (Just got selected as a member of the Research & Education committee).

Session #3: Keynotes

Chair: Dr. Christy Yachi Chiang, Director of Ocean Sustainable Technology Governance Research Center at National Taiwan Ocean University

Dr. Christy Yachi Chiang obtained her bachelor degree in Law from National Taiwan University, LL.M in CyberLaw from Leeds University(UK) and PhD at Durham University(UK). Prior to launching her academic career in 2012, Dr. Chiang had worked in Taiwan Legislative Yuan, Taiwan International Law Association and Tech-Law firms, which enriched her with field experience and diversified networks in both private and public sectors. As an academic who worked in the IP law graduate Institute of Shih Hsin University, IP graduate institute at National Taipei University of Technology and now the Ocean Laws and Policies College at National Taiwan Ocean University, Dr. Chiang has published regularly on issues related to IP laws, internet laws, technology laws and policies. Apart from her research and teaching activities, Dr. Chiang also constantly acts as the external consultant to companies and various government bodies to help with legal challenges from emerging technologies. Her opinions have often been quoted and syndicated by different media outlets. She enjoys exploring the frontier of knowledge and transferring her acquired knowledge on and off the campus.
Keynote #1: “FLOSS and User Case Studies in India”
Speaker: Dr. Frederick Noronha

Frederick Noronha was born in São Paulo, Brazil. He is a journalist based in Saligão in the Bardez taluka of Goa. He is active in cyberspace and involved with e-ventures involving Goa, developmental concerns and free software. Noronha writes mostly on free software / open source issues, technology, and computing issues in India. He is the co-founder of BytesForAll and the founder of the alternate publishing house, Goa 1556.

In 2021, Frederick Noronha took a Ph.D. in English, focusing on publishing in twentieth-century Goa, via Goa University’s Department of English. Noronha is also an alumnus of the Internationales Institut für Journalismus (G57 course, 1990). He received a scholarship from the Institute for Further Education of Journalists (Fojo), Sweden (1998) and was a Sarai Print Media Fellow (2001). He was a Panos Fellow in 2001 (focusing on reproductive health and gender issues).

He has been a full-time journalist since 1983. From November 1987 to December 1994, Noronha was staff correspondent for Deccan Herald. From 1994 onwards, he turned a freelancer, and has written for India Abroad News Service (now Indo-Asian News Service), on news related to Goa and, more recently, Information Technology. He also worked as an editorial consultant with Herald (Goa) from October 2003 to April 2004.

Noronha is a Wikipedia editor, particularly active on Konkani Wikipedia, and was named English Wikipedia’s Editor of the Week in March 2020.

Keynote #2: Technological Intervention in low-income communities and Govt. schools
Speaker: Vignesh Krishnan, TFI Hyderabad City Director

Abstract:

The COVID-19 necessitated school closures in over 180 countries, impacting more than 1.5 billion children globally. Educational Institutions across the world had to pivot towards a reimagined way of teaching and learning. This took shape to the wider emergence of technology as a key enabler to learning. However, the challenges faced by some of the most disadvantaged set of children were far too many – Issues such as lack of devices, unstable electricity, expensive mobile internet packages compounded by the health and economic insecurity owing to COVID-19 were faced by children and families in India. In this context, TFI made a bold attempt at introducing a blended learning model impacting more than 40000 children across 7 cities. This talk briefly aims to address some of the critical challenges and learnings from implementing technological interventions in Govt and low income schools in India.

Biography:

Vignesh is an educator with more than a decade of experience working in the social development space. In this career, he has worked on a range of leadership roles and currently serves as the Director with Teach For India, in Hyderabad. He leads a team of 100 educators directly impacting 3500 children from disadvantaged communities across the city. Vignesh is a Chevening Scholar and holds a Masters in Education from University College London.
Track 7: Town Hall on “Internet Governance”

Track Lead: Prof. Izumi Aizu

For most of us, the Internet has become daily tools. It has some unique features not seen from most other social tools:

- No national borders perceived. It connects so many actors globally, instantly, and cheaply.
- No single structure of control.

The concept of “Internet Governance” has been around for some 30 years. No common definition exists, yet many agree it’s important to discuss the issues around the Internet Governance. Hence, there has been Internet Governance Forum (IGF) organized by the United Nations and each host country annually, together with Multistakeholder Advisory Group (MAG).

This “Town Hall” session aims to bring the hottest issues around Internet Governance on the table, scan and identify what are they, then discuss and examine in more details, and hopefully extract some lessons and actions for each participant.

Preliminary Programme

The time shown is HK Time. Please refer to Program Page for session timing and please double check your local time before attending the session.

### 10th Nov 2022

9PM-10:30PM [HKT] / 1PM - 2:30PM [UTC]

**SCAN**
- Hot Issues to the table.
- Reports from experts:
  - How to deal issues around or using the Internet:
    - Pandemic and Infodemic
    - Big Platformers and regulation
    - Freedom, privacy, human rights and Big Tech Business
    - Divide and fragmentation
  - Introduction – Izumi Aizu
  - "New IP" as a case on Divide and Fragmentation
    - Pablo Hinojosa and Joyce Chen
  - EU situation on Platform Regulation (Interoperability on MSA)
    - Ian Brown

- Discussion - either breakout of two topics or 20 min after each presentation.
  - Closing - Izumi Aizu

### 11th Nov 2022

9PM-10:30PM [HKT] / 1PM - 2:30PM [UTC]

**FOCUS**
- Review the issues presented in the Scan session from Day 1.
- Discuss more deeply on the nature of issues and potential effects to future courses of global information society.
- Extract Meta Issues (if they exist)
- Participants may form parallel groups with themes they select.
  - Internet fragmentation and countermeasures – Carolina Caeiro
Target Audience
We invited anyone interested in or dealing with the policy issues around “Internet Governance”.

EU situation on Platform Regulation –
Vittorio Beltora
- Discussion -
- Closing -

12th Nov 2022
9PM-10:30PM [HKT] / 1PM - 2:30PM [UTC]

ACTION for the Future
Based on the in-depth discussions, participants will discuss and come-up with possible plans for Actions. In the second half of the session, each group will present and share their plans with other groups.

- IGF Review Process - where we are (going to)-
  Adam Peake
- Views from the Asia Pacific –
  Edmon Chung/Jennifer Chung
- A view from Japan –
  Toshiaki Tateishi
- Discussion -
- Closing -
Track 8: Robotics and Automation

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Track Lead: Dr Lyuba Alboul
Track Lead: Dr Lyuba Alboul

Session #1: Keynote Speaker: Prof Alessandro Di Nuovo

Alessandro Di Nuovo is Professor of Machine Intelligence at Sheffield Hallam University. He received the Laurea (MSc Eng) and the PhD in Informatics Engineering from the University of Catania, Italy, in 2005 and 2009, respectively. At Present, Prof. Di Nuovo is the leader of Technological and Digital Innovation for promoting independent lives at the Advanced Wellbeing Research Centre. He is also the leader of the Smart Interactive Technologies research laboratory of the Department of Computing. He is a member of the Executive Group of Sheffield Robotics, an internationally recognized initiative of two Sheffield Universities to support innovative and responsible research in robotics.

Prof. Di Nuovo has a track-record of externally funded interdisciplinary research and innovation in AI and robotics; he has led several large collaborative research projects funded by the European Union, UK Research Councils, charities, and large industries. He has published over 120 articles in computational intelligence and its application to cognitive modelling, human-robot interaction, computer-aided assessment of intellectual disabilities, and embedded computer systems.

Currently, Prof. Di Nuovo is editor-in-chief (topics AI in Robotics; Human Robot/Machine Interaction) of the International Journal of Advanced Robotic Systems (SAGE). He is also serving as Associate Editor for the IEEE Journal of Translational Engineering in Health and Medicine.

Paper Presentations
- Marcus Wigan, Greg Adamson, Priya Rani, Nick Dyson and Fabian Horton, Chatbots and explainable artificial intelligence
- Jordan Schoenherr, Social Categories in Cyberspace: Frequency Effects and Trust in Media

Session #2: Keynote Speaker: Dr. Stevienna de Saille

Dr. Stevienna de Saille, Sociologist in science and technology studies, Institute for the Study of the Human (iHuman) and Department of Sociological Studies, University of Sheffield.

Dr. Stevienna de Saille is a science and technology studies scholar in the Institute for the Study of the Human (iHuman), Department of Sociological Studies, University of Sheffield, where she leads the Human Futures research theme. Her research takes a critical and systemic approach to investigating the social impact of emerging technologies, with a focus on developing broad transdisciplinary collaborations between social scientists and engineers and improving equitable
outcomes through Responsible Innovation. Her most recent project, Imagining Robotic Care, was funded by the UKRI-Trustworthy Autonomous Systems network as a pump-priming project investigating the sociotechnical imaginaries of robot-assisted social care held by a diversity of stakeholders and publics in the UK health-social care ecosystem.

Dr. de Saille is also a co-founder of the Fourth Quadrant Research Network, a collaboration between economists and STS, innovation and development scholars, whose first book, ‘Responsibility Beyond Growth: A case for responsible stagnation’, recently won the Freeman Award for collective contribution to STS from the European Association for the Study of Science and Technology (EASST). As a keen side interest, she is also a certified facilitator in Lego Serious Play, which she uses for teaching and research.

**Paper Presentation**
- Christian Herzog, Is Algorithmic Personalized Pricing Unjust?

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**Session #3: Keynote Speaker: Manuel Graña Romay**

**Title:** Challenges for the immersion of robotics in daily life

Manuel Graña Romay received the M.Sc. and Ph.D. degrees in Computer Science from Universidad del Pais Vasco (UPV/EHU), Donostia, Spain, in 1982 and 1989, respectively. His current position is a Full Professor (Catedrático de Universidad) with the Computer Science and Artificial Intelligence Department of the Universidad del Pais Vasco (UPV/EHU) since 1998, where he acted as head of department in the period 2005-2007. He is the head of the Computational Intelligence Group (Grupo de Inteligencia Computational), which has been recognized as excellent research group by the Basque Government with continuous specific funding since 2005, last grant for the period 2022 – 2024. The research group has carried out over 30 national funded research projects, three European Commission funded projects, and a few private company research contracts. The research works in the group spread over a great variety of topics, including applications of artificial intelligence and computational intelligence to linked multicomponent robotic systems, reinforcement learning, medical image in the neurosciences, multimodal human computer interaction, remote sensing image processing, content based image retrieval, lattice computing, semantic modeling, data processing, classification, and data mining. He has been advisor for over 40 PhD Thesis, editor of more than 20 books of proceedings and collections of works on monographic topics, editor of more than 15 special issues in journals, and co-author of more than 250 journal papers (JCR indexed journals). He is associated editor of Neurocomputing, Information Fusion, Computational Intelligence and Neurosciences, Frontiers in Big Data, Journal of Mathematical Imaging and Vision, Sensors, Applied Sciences.

**Lead Speaker: Dr. Alboul Lyuba**

**Title:** Sharing spaces with robots

Dr Lyuba Alboul is a Senior Research Fellow at the Industry and Innovation Research Institute, and a lecturer at the Department of Engineering and Mathematics, Sheffield Hallam University, England. Lyuba has been conducting research on the interface of various scientific domains. She has been awarded over 15 research grants (both personal and as a member of consortia) from local and international funding bodies in various countries, including Italy, the Netherlands, Spain, Bulgaria, and the UK. Among those are EPSRC, EU, MoD, STW/ NWO (Analogue of EPSRC in the Netherlands), and CNR (Analogue of EPSRC in Italy) on subjects in Mathematics, Computing, 3D modelling, Robotics and AI.

Lyuba’s current research interests involve the interplay of discrete and continuous representation of reality, perception, and interaction with real and virtual worlds, by both humans and machines.
Session: #1: DARPA’s ADAPTER Program: Applying the ELSI Approach to Humancentric Implantables

The ADvanced Acclimation and Protection Tool for Environmental Readiness (ADAPTER) program is located within the Defense Advanced Research Project Agency (DARPA) Biological Technologies Office (DARPA/BTO). ADAPTER aims to develop a travel adapter for the human body, an implantable or ingestible bioelectronic carrier that contains cellular factories and compounds (therapies) to be released upon secure external activation. Imagine a soldier on deployment having the command and control to trigger a release of therapies to prevent particular conditions in their own body. The system is designed to either entrain the sleep cycle, halving the time to reestablish normal sleep after a disruption (e.g., jet lag), or to eliminate the top 5 bacterial sources of traveler’s diarrhea. Consider it a remote control capability to wellness and recovery. ADAPTER is a way to physically interface with the human body, a type of wireless “living pharmacy”, via an implantable device that attempts to control the body’s circadian clock, aiding to regulate cycles by providing accurate diagnostics and response mechanisms. This session is dedicated to exploring the Ethical, Legal and Social Implications/Aspects (ELSI/ELSA) of ADAPTER. The panel is made up of transdisciplinary scholars with differing strengths in ethics, law and social implications of advanced biomedical implantable devices. Using a normative approach, the panel will ask the main question: “Is it desirable for warfighters in the US Armed Forces to bear an implantable device for the goal of better sleep cycles and less prevalence of traveler’s diarrhea?”

The DARPA Mission and Perspective and the Role of ELSI

Since its inception, DARPA has had a singular mission: to make pivotal investments in breakthrough technologies for national security. Working with innovators inside and outside of Government, DARPA has repeatedly transformed revolutionary concepts into practical capabilities, pushing critical frontiers ahead of the Nation’s adversaries. DARPA’s leadership and team members understand that this pursuit of cutting edge technologies will at times raise ethical, legal, security, or policy questions that cannot and should not go unanswered. Therefore, DARPA is committed to addressing the broader societal questions raised by its work and engaging those in relevant communities of expertise to provide context and perspective for consideration. DARPA works rigorously within the law and regulations and with appropriate organizations where legal and policy frameworks already exist. In new and uncharted territory, the Agency engages a variety of experts and stakeholders with varying points of view—both to hear what they and their professional communities of practice have to say and to help convey to those communities DARPA’s insights about what technology can and cannot do.

Relevance to Bioengineering Track:

This panel addresses the technological trajectory of next generation technologies, especially focused on embedded devices (in vivo) for the treatment of two non-critical health conditions: jet lag and traveler’s diarrhea. Using an ethical, legal and social implications (ELSI) framework the panel will address an open discussion into future systems of care and how they may me desirable (or not), permissible (or not), to the broader community, beyond the military.
Raising Public Awareness about the Technological Potentials:

This panel introduces the potential for a ‘living pharmacy’ to be embedded in the human body to aid warfighters. Semi-autonomous to fully autonomous drug delivery has long been touted as a way for patients to better manage their health conditions ensuring better and more improved outcomes, as therapies are released predictably as required. The biomedical domain has seen a spate of innovations in the last two decades of fully implantable solutions, related to the heart and brain to better regulate a patient’s health. We are now considering uberveilant devices for preventative care based on real-time diagnostics, rather than care based on prosthesis. This is more about strengthening a warfighter, than recovering a lost function. But are there alternatives? Could less technical solutions aid in supporting warfighters for the two scenarios posed- jet lag and traveler’s diarrhea? It is incredibly important to reach the public with this panel for the main reason that military-industrial relationships are well known. The potential for a spin-off commercial venture from the ADAPTER Program are real, even if not a single warfighter ever receives an ADAPTER implantable. ELSI discussions are paramount at the nascent stages of any new biotechnological innovation. The importance of raising public awareness about potential socio-technical imaginaries is also important as it is a form of education.

**Keywords:** biomedical engineering, ethics, global and public health, nanotechnology, pharmacology and toxicology, science and technology studies, and science and values

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**Katina Michael**

**Title:** Socio-technical Design for Complex Systems

**Talk Description:** Professor Michael will discuss the socio-technical design process for complex systems like implantable or ingestible technologies, drawing upon concepts in ELSA and socio-technical systems.

**Bio:** Dr. Michael is a Professor in the School for the Future of Innovation in Society and School of Computing and Augmented Intelligence at Arizona State University. She researches the socio-ethical implications of emerging technologies, including implantable devices.

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**Sara Gerke**

**Title:** Legal and Ethical Issues of MedTech in the Military

**Talk Description:** Professor Gerke will discuss privacy laws in the U.S. and Europe that are relevant when developing cutting-edge new medical technologies for the military. She will also explore ethical issues raised by such technologies and solutions on how to protect the privacy of individuals adequately.

**Bio:** Ms. Gerke is an Assistant Professor of Law at Penn State Dickinson Law. She researches ethical and legal challenges of artificial intelligence and digital health topics, including ingestible electronic sensors.

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**Maxwell Mehlman**

**Title:** Risks and benefits of ADAPTER

**Talk Description:** This presentation will address the benefits, risks and harms of the ADAPTER Program. It will address prevention versus enhancement of military personnel and suggest an ethical framework for deployment.

**Bio:** Mr. Mehlman is Professor of Law and Bioethics at Case Western Reserve University Schools of Law and Medicine. He is interested in the bioethics of military medicine and military performance enhancement.
Matthew Wynia

Title: Ethical and Practical Challenges in Working on Military Medical Research

Talk Description: Dr. Wynia will explore some ethical and practical challenges in working on military medical research that could be construed as ‘dual use’ (i.e., research that might enhance both defensive and offensive capabilities), including how to communicate about such research with the public and our allies and adversaries.

Bio: Dr. Wynia is an internal medicine and infectious diseases physician and Director of the Center for Bioethics and Humanities at the University of Colorado. He is interested in how clinicians manage ethical issues and uncertainty in emerging and innovative biomedical technologies.

Session #2:

Keynote Speaker: K S Parthasarathy

K S Parthasarathy was the secretary of the Atomic Energy Regulatory Board (AERB) from 1987 to 2004. Prior to joining AERB he worked in Bhabha Atomic Research Centre in various capacities since 2004. He secured his Ph D from the University of Leeds, UK. He had advanced training in medical physics. He specialized in Environmental Radioactivity and high sensitive counting while he was a Colombo Study Fellow at the UK Medical Research Council’s Erstwhile Environmental Research Unit, Department of Medical Physics UK. He was a Research Associate in the University of Virginia Medical centre, Charlottesville in 1981-82.

Keynote Speaker: Thais Russomano

Title: Human Space Exploration – Challenges and Achievements

Thais Russomano is a Brazilian doctor and scientific researcher specialising in space medicine, space physiology, biomedical engineering, telemedicine and telehealth. She founded the Microgravity Centre (MicroG) at PUCRS university, Porto Alegre, Brazil, in 1999, coordinating it for 18 years until 2017. The MicroG is the first educational and research centre in Space Life Sciences in Latin America. She is a senior lecturer at King’s College London, lecturing in Aviation and Space related courses; coordinator of the Space Network (Rede Espaço), University of Lisbon; guest lecturer at Aalto University, Finland in Space and Design; guest lecturer at Pfarrkirchen Institute of Technology, European Campus, contributing to the MSc in Medical Informatics; consultant for the Skolkovo Foundation; member of the Mars One Advisory Board; International Relations Director for the UK-based HuSCO, Human Spaceflight Capitalization Office; and director of two private companies linked to space life sciences and telehealth – InnovaSpace Consultancy (UK) and International Space Medicine Consortium (USA).

Session #3:

Keynote: What Do We Know About the Havana Syndrome?

Speaker: Kenneth R. Foster

Abstract:

In late 2016. U.S. Embassy personnel in Havana, Cuba, began to report the development of unusual symptoms and clinical signs. For some of these patients, the case began with the sudden onset of a loud noise, perceived to have directional features, and accompanied by pain in one or both ears or across a broad region of the head, and in some cases. a sensation of head pressure or vibration. dizziness followed
in some cases by tinnitus, visual problems, vertigo, and cognitive difficulties. Since then, several hundred other individuals have come forward with similar health complaints. Despite intensive investigation, the cause of the “anomalous health incidents” remains unexplained. This talk will review the current state of the issue, and the two dominant theories for the cause of the symptoms (an attack using directed microwave energy, and psychogenic effects).

References

Biography:
Dr. Kenneth R. Foster (Life Fellow IEEE) received the Ph.D. degree in physics from Indiana University, Bloomington, IN, USA, in 1971. He was with the U.S. Navy, Naval Medical Research Institute, Bethesda, MD, USA, from 1971 to 1976. Since 1976, he has been with the Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, USA, where he is currently Professor Emeritus. He has been involved in studies on the interaction of nonionizing radiation and biological systems, including mechanisms of interaction and biomedical applications of radio frequency and microwave energy. In addition, he has written widely about scientific issues related to possible health effects of electromagnetic fields. He has authored approximately 170 technical papers in peer-reviewed journals, numerous other articles, and two books related to technological risk and the law. In 2016 he received the d’Arsonval Award from the Bioelectromagnetics Society for contributions to the field of bioelectromagnetics. He is a longtime member of TC 95 of the IEEE International Committee on Electromagnetic Safety (which sets safety limits for radiofrequency energy) and a member of the Physical Agents Committee of the American Conference of Industrial Hygienists, among many other professional activities. He is Life Fellow of the IEEE, and fellow of the American Institute for Medical and Biological Engineering and the Electromagnetics Academy.

Paper Presentations
- Pablo C. Herrera and Macarena Valenzuela-Zubiaur, The impact of the democratization of technologies in vulnerable groups, artisans and micro-entrepreneurs. The role of Mobile Fab Labs
- Katina Michael, Just-in-Time Transnational Organized Crime: Just Another Adaptive Supply Chain
Track 10: Technology, Ethics & Evolving Standards

Track Lead: Prof. Greg Adamson

10th Nov 2022 1PM-3PM [HKT] / 5AM - 7AM [UTC]  
Session #1: Evolving Standards
Chair: Ruth Lewis, BE (Elec), Grad Dip Digital Comms, MSF, Chair SSIT Standards Committee

10th Nov 2022 2:30PM-4PM [HKT] / 6:30AM - 8AM [UTC]  
Session #2: When Good Tech Goes Bad: The Impact of Non-Supported Devices
Chair: Mark A. Vasquez, Senior Program Manager, IEEE TechEthics

11th Nov 2022 2:30PM-4PM [HKT] / 6:30AM - 8AM [UTC]  
Session #3: Paper Presentations

Session #1: Evolving Standards

The Autonomous and Intelligent Systems we are developing today promise breathtaking advances in human capability and productivity. However, they also risk of out-of-control, accelerated harms, unintended consequences, and the possibility for mischief and bad actors.

IEEE SSIT Standards Committee is dedicated to developing new Global Standards to ensure ethical and responsible use of emerging technologies and data, considering the likely impact to the individual, to society and to the environment by promoting the benefits to humanity and minimizing the risks.

Come and learn how the nine Standards Working Groups represented on this panel by their Standards’ Chairs are creating responsible, ethical and sustainable global Technology Standards for use by the AI, Engineering and IT industries, as well as for adoption by Corporate, country and regional policy makers and Developers.

Facilitator: Ruth Lewis, BE (Elec), Grad Dip Digital Comms, MSF, Chair SSIT Standards Committee

Ruth is an experienced strategic IT consultant, qualified futurist and professional engineer based in Melbourne, Australia, having worked across many industries, sectors and technologies with a particular focus on the innovative and ethical use of digital technology in business and in society. Her expertise is in introducing new technologies to business, creating managed services and creating innovative governance models within organisations. Ruth’s passion is to work towards the ethical and sustainable development and use of technology for the good of society, enabling her clients to make wise and informed decisions and investments today to enable their preferred futures.

Ruth is the Chair of the IEEE Society on Social Implications of Technology (SSIT) Standards Committee, is a member of the IEEE Standards Association’s AsiaPac Regional Advisory Group, is the Standards Coordinator for the IEEE SSIT Australia and IEEE Victorian Section, and was an active contributing member of the IEEE 7000TM-2021 Standard Model Process for Addressing Ethical Concerns during System Design.

Panellists

Panellists will represent the following IEEE Standards Association Working Groups, as part of this SSIT Standards Committee panel:
P2895: Taxonomy for Responsible Trading of Human Generated Data.
P2987: Recommended Practice for Principles for Design and Operation Addressing Technology-Facilitated Inter-personal Control.
P7010.1: Recommended Practice for Environmental Social Governance (ESG) and Social Development Goal (SDG) Action Implementation and Advancing Corporate Social Responsibility.
P7011: Process of Identifying and Rating the Trustworthiness of News Sources.
P7012: Machine Readable Personal Privacy Terms.
P7014: Standard for Ethical considerations in Emulated Empathy in Autonomous and Intelligent Systems.
P7030: Recommended Practice for Assessing Ethical Concerns for the Design and Use of Extended Reality (XR) Technologies.

Peter J Reid OAM, B Eng. (Comm), FIEAust, MIEEE, Chair IEEE P7011, Secretary SSIT Standards Committee

An experienced manager and communications engineer who was involved in the introduction of a number of new technologies (at the time), electronic switching systems, mobile phones, automatic meter reading, vehicle tracking, into Australia. Peter’s community involvement, covered several areas, school, economic and regional development committees, trade unions, and sporting organisations. Peter is currently Secretary of SSIT Standards Committee and Chair of WG P7011 on News Site Trustworthiness.

Doc Searls, Vice-Chair IEEE P7012

Doc Searls is a lifelong journalist, author, businessperson, broadcast veteran, and photographer who may be best known as founding figure in blogging.

As an editor with Linux Journal for 23 years (finally as editor-in-chief), Doc was influential in getting the world talking about and implementing both Linux and open source. Doc’s byline has also appeared in The Wall Street Journal, The Globe and Mail, and many other publications. He is co-author of The Cluetrain Manifesto (Basic Books, 2000, 2010), a business bestseller, and author of The Intention Economy: When Customers Take Charge (Harvard Business Review Press, 2012).

He is co-founder and board member of Customer Commons, a nonprofit spun out of ProjectVRM which he started as a fellow at Harvard’s Berkman Klein Center for Internet and Society (and which is still hosted there), a fellow with the Center for Information Technology and Society at UC Santa Barbara, a visiting scholar with the Ostrom Workshop at Indiana University, and a business veteran who co-founded and served as Creative Director for Hodskins Simone and Searls, which for many years was one of Silicon Valley’s leading technology advertising and marketing agencies.

He co-founded and co-organizes the Internet Identity Workshop, a highly influential open space conference that has been going strong since 2005, meeting twice yearly at the Computer History Museum. His nickname, Doc, was acquired when he worked in radio, and these days he hosts the FLOSS Weekly live show and podcast for the TWiT network, and co-hosts the podcast Reality 2.0.

As a photographer (who started in the newspaper business), Doc has now published more than 75 thousand photos online, most of which are permissively licensed to encourage use by others. Today hundreds of those are used in Wikipedia articles, while his two collections on Flickr have received more than 17 million views.
Ben Bland, Chair IEEE P7014

Ben Bland serves as Chair of the Institute of Electrical and Electronics Engineers (IEEE) P7014 working group, developing a global standard for the ethics of empathic technology. He is also a steering committee member for the IEEE Society on Social Implications of Technology.

Ben works at the nexus of innovation, operations and product strategies, technology ethics, and digital media. For five years he led operations and marketing at Sensum – a startup developing AI-based solutions that measure and respond to human emotions from a wide range of biometric data types, in realistic and challenging environments, for some of the world’s biggest brands.

Ben’s background covers a broad range of digital ventures, from online marketing, e-commerce and content production, through digital strategy consulting, to wider tech startup consulting & entrepreneurship. He has provided strategic consultation to dozens of startups, charities and industry organisations, has written and produced multimedia content for various platforms, and speaks on technology ethics and innovation around the world.

Stephanie Russo Carroll / Jane Anderson, Co-Chairs IEEE P2890

Dr. Stephanie Russo Carroll is Dene/Ahtna, a citizen of the Native Village of Kluti-Kaah in Alaska, and of Sicilian-descent. Based at the University of Arizona (UA), she is Assistant Professor, Public Health and American Indian Studies Graduate Program; Acting Director and Assistant Research Professor, Udall Center for Studies in Public Policy; Associate Director, Native Nations Institute; and Affiliate Faculty in the College of Law. Stephanie’s interdisciplinary research group the Collaboratory for Indigenous Data Governance develops research, policy, and practice innovations for Indigenous Data Sovereignty. Her research, teaching, and engagement seek to transform institutional governance and ethics for Indigenous control of Indigenous data, particularly within open science, open data, and big data contexts. Stephanie co-edited the book Indigenous Data Sovereignty and Policy and led the publication of the CARE Principles for Indigenous Data Governance. Stephanie co-founded the US Indigenous Data Sovereignty Network and co-founded and chairs the Global Indigenous Data Alliance (GIDA) and the International Indigenous Data Sovereignty Interest Group at the Research Data Alliance. She Chairs the Indigenous Data Working Group for the IEEE P2890 Recommended Practice for Provenance of Indigenous Peoples’ Data.

Dr Jane Anderson is an Associate Professor at New York University in Lenapehoking (New York) and Global Fellow in the Engelberg Center for Innovation Law and Policy in the Law School at NYU. Jane has a Ph.D. in Law and works on intellectual and cultural property law, Indigenous rights and the protection of Indigenous/traditional knowledge and cultural heritage. For the last 20 years Jane has been working for and with Indigenous communities to find, access, control, and regain authority and ownership of Indigenous cultural and intellectual property collections and data within universities, libraries, museums and archives. Jane is co-founder of Local Contexts which delivers the Traditional Knowledge and Biocultural Labels and Notices. She is also the co-founder of Equity for Indigenous Research and Innovation Coordinating Hub and is Vice-Chair of the Indigenous Data Working Group for the IEEE P2890 Recommended Practice for Provenance of Indigenous Peoples’ Data.

Angelo Ferraro, Chair IEEE P2895

Angelo Ferraro currently holds Research Fellowship and Research Assistant positions as well as a PhD Candidate, subsequent to being an Instructor of Record in the Department of Electrical Engineering, at the University of South Carolina. He holds a Master of Engineering in Electrical Engineering (Power Device Physics,) a B.S. in Electrical Engineering (Instrumentation,) and a B.S. in Civil Engineering (Structures and Material Science,) and extensive post graduate studies in Biomedical Engineering.

His experience includes Visiting Scientist with the Office of Naval Research as a technology transfer expert, and Department of Energy program consultant, in addition to research, executive, and managerial positions at several startups through medium sized companies, as well as the multinationals: Harris Semiconductor, Power R&D Laboratory, and General Electric Corporate R&D Center. Also successfully serving for several years as an industry turn-around consultant to faltering second stage companies. A keen proponent in energy fundamentals and smart distributed control, including some of the first Artificial Intelligence (AI) applications.
His current research interests are nature-inspired architecture and control of large systems, i.e., smart cities, smart grids, and societal application. A natural outcome is the need to promote engineering ethics in these transformational AI and Machine Learning technologies. Awards include R&D-100 publications and republished in IEEE text. This work consists of service on standards, technology, and educational development committees and currently serves on several working groups and IEEE Societies, including Chair of the IEEE P2895 Responsible Trading of Human Generated Data Working Group.

Henry Nash, Chair IEEE P2987

Henry works at IBM as CTO Advocacy, Hybrid Cloud & Emerging Technologies, and has been a core contributor and author to number of open source projects (e.g. OpenStack Keystone). He has a long history in the creation of enterprise software & breakthrough emerging technology, having founded 5 venture backed startup companies in Europe and USA, finally coming to IBM via acquisition in 2009. Among the awards these companies have received are both The Queen’s Award for Technology and The Queen’s Award for Export. He holds a 1st class honours degree in Electrical Engineering from the University of Southampton, UK.

Deborah Hagar, MBA, Chair IEEE P7010.1

Deborah is President of The Foundation for Sustainable Communities, providing collaborative platforms and new models of economic growth. The Foundation has organized projects in economic corridors of southern California, applying advanced technology and new digital networks, including Smart Cities with IBM in public-private partnerships. She has 35 years business/management experience with demonstrated leadership and accomplishment, in multiple industries including aerospace and healthcare. Ms. Hagar is currently Chair of IEEE Working Group on Advancing Corporate ESG and Social Responsibility and is Co-Chair of IEEE’s Metrics/Indicators Committee on IEEE’s Planet Positive 2030 Initiative. Deborah serves as a Sr. Adjunct Professor with the University of LaVerne in business and economics.

Gisele Waters, Ph.D., Chair IEEE P3119

Gisele designs and operationalizes health service lines for seniors and vulnerable patient populations using AI led diagnostics aimed at prevention and wellness. She is a contributing member to many IEEE ethics standards including 7000, P7004, P7008, P2418.6, ECePAIS certification, and P2089. For the IEEE 7000-2021 Approved Model Process for Addressing Ethical Concerns During System Design, she led two Comment Resolution Groups. Gisele teaches Methods of Inquiry and Chairs the research of doctoral candidates as Adjunct Faculty at Fischler School of Education at Nova Southeastern University. Gisele is also Chair of the forthcoming IEEE AI Procurement standard, P3119.

Monique Morrow, MSc, MS, MBA, Chair IEEE P7030

Monique Jeanne Morrow has over 25 years’ experience as a global technology leader. Monique Morrow is Senior Distinguished Architect for emerging technologies at Syniverse Technologies where her main role and responsibilities are to provide thought leadership and to develop the strategic direction and vision for Syniverse’s emerging technologies across the company, partners and industry forum. Monique’s expertise is in cybersecurity, privacy, mobile payments, ethics in extended reality and distributed ledger technologies for example, blockchain. She has worked across the industry including AMD, Ascom Hasler, Swisscom, Cisco and has been active in the start-up community. Additionally, Monique is President and Co-Founder of the Humanized Internet a Swiss based non-profit with a focus on digital identity, and ethics in technology. She is also an active member of the IEEE Ethics in Action Executive Committee as well as Co-Chair of the IEEE Ethics in Action Extended Reality Industry Connections Group. Monique chairs the IEEE P.7030 Global Extended Reality Working Group.
recommended practice for assessment of extended reality technologies. Monique is Co-Chair of GSMA-Distributed Ledger Technology [DLT] group and served as Syniverse’s representative in the World Economic Forum [WEF] Data Policy Council and Digital Justice. Monique has been recognized in the industry for her tireless focus on social good. Monique holds over 16 patents and has co-authored several books. Amongst Monique’s accomplishments include the following: Monique was selected as one of the top Digital Shapers 2018 in Switzerland. Forbes Magazine listed Monique Morrow as one of the top 50 women globally in technology. OneWorldIdentity recognized Monique as of the top 100 influencers in identity for 2019. In May 2019, Monique was recognized by Cybersecurity Ventures as one of the top 100 women in Cybersecurity . In March 2020, Monique was one several innovators featured in Red Bull Innovator Magazine . In April 2020, Monique was selected as one of the 5 leading figures in Business by the Europa Forum Lucerne [Switzerland] specific to its theme, “Safety and Security in Times of Uncertainty.” Monique is also 2020 winner WomenTech Network Global Technology Leadership award. Monique has been recognized in 2021 as one of top 100 Women in Cybersecurity in Europe. Monique was named by Chief in Tech as one of the top 100 Women in Tech Leaders to watch in 2022. Monique has an MSc in Digital Currency and Blockchain; an M.S. in Telecommunications and MBA

Session#2: When Good Tech Goes Bad: The Impact of Non-Supported Devices
Chair: Mark A. Vasquez, Senior Program Manager, IEEE TechEthics

This IEEE TechEthics panel will discuss the impacts of medical devices and other technologies that suddenly cease to operate and what can be done to ensure users continue to receive the support they need.

Mark A. Vasquez (moderator) is a Certified Association Executive (CAE) with over 25 years of experience in association management at IEEE. He currently serves as the senior program manager for IEEE TechEthics, a program that drives conversations about the ethical and societal impacts of technology. In this capacity, he works to develop relationships with others in the technology ethics community, produces events, convenes thought leaders, and more. Mark is an engineering graduate of The Cooper Union.

Elizabeth Chamberlain is Director of Sustainability at iFixit, the repair website with over 80,000 guides for how to fix everything from your toaster to your tractor. She advocates for repairable design, repair-friendly environmental regulations, and Right to Repair legislation.

Robert Sparrow is a Professor in the Philosophy Program, and an Associate Investigator in the Australian Research Council Centre of Excellence for Automated Decision Making and Society, at Monash University, where he works on ethical issues raised by new technologies. He has published on topics as diverse as the ethics of military robotics, the moral status of AIs, human enhancement, stem cells, preimplantation genetic diagnosis, xenotransplantation, and migration. Rob has served as co-chair of the IEEE Technical Committee on Robot Ethics and was one of the founding members of the International Committee for Robot Arms Control.
Rajesh P. N. Rao is the CJ and Elizabeth Hwang Professor in the Paul G. Allen School of Computer Science and Engineering and Department of Electrical and Computer Engineering at the University of Washington (UW), Seattle. He is also the co-Director of the Center for Neurotechnology (CNT), Adjunct Professor in the Bioengineering department, and faculty member in the Neuroscience Graduate Program at UW. He directs the Neural Systems Laboratory located in the Paul G. Allen Center for Computer Science and Engineering. His awards include a Guggenheim Fellowship, a Fulbright Scholar award, an NSF CAREER award, an ONR Young Investigator Award, a Sloan Faculty Fellowship, and a David and Lucile Packard Fellowship. His research interests span brain-computer interfaces, computational neuroscience, and artificial intelligence as well as the ancient Indus script and classical Indian paintings.

Session#3: Paper Presentations

- Cristina Dreifuss-Serrano and Pablo C. Herrera, Assessing ethics in Problem-based Learning volunteer experiences
- Christian Herzog, Noah-Art Leinweber, Stefanie Engelhard and Lars Engelhard, Autonomous Ferries and Cargo Ships: Discovering Ethical Issues via a Challenge-Based Learning Approach in Higher Education
- Hayden Cooreman and Qin Zhu, Critical Reflections on the Ethical Regulation of AI: Challenges with Existing Frameworks and Alternative Regulation Approaches
Track 11: Social Choice and Decision Complexity

10th Nov 2022
1PM - 2:30PM [HKT] / 5AM - 6:30AM [UTC]  Session #1: Paper Presentations

11th Nov 2022
1PM - 2:30PM [HKT] / 5AM - 6:30AM [UTC]  Session #2: Paper Presentations

12th Nov 2022
1PM - 2:30PM [HKT] / 5AM - 6:30AM [UTC]  Session #3: Keynote Speech: The Digitization of Trust and the Young Leaders of Southeast Asia

Track Lead: Prof Joseph Sarkis
Co Lead: Dr. Sundarraj R P

Session #1: Paper Presentations
- Jordan Schoenherr, Wholly Alliance: Psychographics and Behavioural Nudging in the Internet of Things
- Yuanchu Song, The Questionable Foundations and Implications of Money-Making Apps in China
- Andrés Domínguez Hernández and Vassilis Galanos, A Toolkit of Dilemmas: Beyond debiasing and fairness formulas for responsible AI/ML
- Robyn Ruttenberg-Rozen, Nichole Powell and Pamela Leggett-Robinson, Inclusion is Much More Than Access: STEM Capital and Agentic Strategies
- Marc Cheong, Social Media Harms as a Trilemma: Asymmetry, Algorithms, and Audacious Design Choices
- Yuyang Tang and Richard Williams, Investigating Relationship Conflict within the Social Network of Large IS Projects using a SIR Model

Session #2: Overview of IEEE P3800 Data Trading System and Paper Presentations
Keynote: Overview of IEEE P3800 Data Trading System
Speaker: Dr. Hiroshi Mano

Abstract:
IEEE P3800 standard establishes a system designed to trade data through domain-independent and principled marketplaces operating under a unified architecture. It defines terminology, a reference model, and the roles and functions of data providers, data users, and data marketplaces. The standard provides an overview of the data trading system using its reference model.

This section introduce the overview of IEEE P3800 and status of standardization works.

Biography:
Dr. Hiroshi Mano

In 2014, established EverySense, Inc. EverySense developed an IoT information trading platform and acquired its national patent in Japan.

Founder and Secretary General of Data Trading Alliance (DTA) that is an industry-academic-government alliance with the cooperation of Japan Cabinet Office, Japan Ministry of Internal Affairs and Communications, Japan Ministry of Economy.

Has been deeply involved in Japan and overseas in standardization and rule proposals in the fields of wireless communications, Internet, data trading, etc. and contributed to the Big Data strategy proposal in the G7 ICT Ministerial Meeting in Turin in 2017.
2020 IEEE P3800 DTS(Data Trading System) WG Chair.
2021 Data Society Alliance (reorganized and renamed from DTA) Secretary General.

Paper Presentations:
- Maria Jihan Sangil, Informing Government Decision-Making with Online Citizen Feedback and Social Media: Pedestrianization of Streets
- Xiang Michelle Liu and Diane Murphy, Applying a Trustworthy AI Framework to Mitigate Bias and Increase Workforce Gender Diversity
- Sheilla Njoto, Marc Cheong, Reeva Lederman, Aidan McLoughney, Leah Ruppanner and Anthony Wirth, Gender Bias in AI Recruitment Systems: A Sociological- and Data Science-based Case Study

Session #3: Keynote Speech: The Digitization of Trust and the Young Leaders of Southeast Asia

Keynote: The Digitization of Trust and the Young Leaders of Southeast Asia
Speaker: Dr. Vladimir Yapit Mariano, Fullbright University, Vietnam

Dr. Vladimir Mariano (Vlad) is the Lead Faculty for Technology and Innovation at the YSEALI Academy of Fulbright University Vietnam. Vlad graduated with a Ph.D. in Computer Science and Engineering at the Pennsylvania State University, with research interests in machine learning and computer vision. He has worked on industrial projects with the National Robotics Engineering Center of Carnegie Mellon University and VideoMining Corporation in Pennsylvania, USA. He published three U.S. patents with VideoMining.

As an academic, Vlad has served as Director and Associate Professor of the Institute of Computer Science at the University of the Philippines Los Banos. In Vietnam, Vlad served as Lecturer and Research Coordinator of the School of Science and Technology at the Royal Melbourne Institute of Technology. During his time in academia, Vlad also co-founded and served as Chief Technology Officer for several technology startup companies. These startups delivered various services including drone-based aerial surveys, video analysis of retail stores and mobile app development for human resource services.

On the side, Vlad teaches kids coding, assembling electronics and making robots. He enjoys traveling, artwork and playing the piano.

Paper Presentations:
- Harish Chowdhary and Naveen Chowdhary, Universal Acceptance as an Elixir for Multilingual Internet and Cybersecurity Considerations
- Leon Wilson, Universal Access: A Sociotechnical Analysis of Broadband Internet Adoption in the Public Interest
- Hongyu Zhang and Grant McKenzie, Towards place-based privacy: Challenges and opportunities in the “smart” world
Securitization for Sustainability of People and Place: A Call to Transdisciplinarity

The Fifteenth Workshop on the Social Implications of National Security (SINS22)

Human Factors Series

Co-located with the IEEE International Symposium on Technology and Society (ISTAS22)

Venue: Hong Kong (virtual)

Date: 10 November - USA/UK; 11 November - Australia/HK

Duration: approx. 13 hours of educational seminar presentations in four locations

Organizers

- Roba Abbas, University of Wollongong (roba@uow.edu.au)*
- Katina Michael, Arizona State University (katina.michael@asu.edu)*
- Jeremy Pitt, Imperial College London
- Kathleen Vogel, Arizona State University
- Mariana Zafeirakopoulou, University of Technology, Sydney (mariana.zafeirakopoulou@student.uts.edu.au)*

* Corresponding

Program

1. Securitization of the Person Arizona 9:00am AZ
2. Securitization of Place London 9:00pm GMT
3. Securitization through Transdisciplinarity Sydney 11:00am AEDT
4. Socio-Historical Origins of Securitization Hong Kong 1:00pm HKT

An initiative of the IEEE SSIT Technical Committee on Socio-Technical Systems in cooperation with the Society Policy Engineering Collective (SPEC) at Arizona State University.
Abstract

The term “national security” can be defined in numerous ways in the context of defense. When we refer to national security in the military context, it usually means the way in which a defense force will securitize its national borders. However, securitization, can also be considered from a different perspective, that of applying a broader view of “security,” beyond just military force and conflict. Increasingly, an all-hazards approach to national security has been considered in the literature whereby we refer to economic, environmental and energy security (Romm 1993), among other non-military facets (e.g., food, health, demographic, informational and resource as per Paleri (2008), and other aspects falling within transnational crime).

The significance of this broader perspective largely emerged after the Cold War ended, where many scholars believed it necessary to expand the notion of “security” to include transnational crime matters, such as human trafficking. Buzan et al. (1998), listed five distinguishing sectors relevant to securitization: the military sector, the political sector, the societal sector, the economic sector, and the environmental sector. Thus, we can refer to military security, political security, societal security, economic security, and environmental security. Securitization, based on this view, implies “survival across a number of dimensions” (Castle 1997: 4).

While national security is often approached from the position of military/defense applications, non-military forms of securitization require additional attention and investigation from an integrated perspective, calling on many disciplines and the emergence of transdisciplinary frameworks in order to understand the social implications of national security technology, in particular, across a range of contexts. Thus, this workshop considers how transdisciplinarity may aid in a holistic approach to appreciating the interdependencies that exist between various sectors of security, to ensure the securitization of people and place toward sustainability. This may involve consideration of national innovation system (Nelson 1993) contexts through a socio-technical transitions lens (Elzen, Geels et al., 2004) that may aid in the design of complex socio-technical infrastructures and architectures, in addition to other approaches that promote an all-hazards and comprehensive view of securitization.

A primary objective of this workshop is to explore the role that technology can play in achieving security of people and place, focusing on non-military aspects and securitization from the perspective of sustainability, values, empathy, and human-centered and philosophical approaches to securitization, while incorporating the link with the various sectors of securitization.
Draft 15th SINS 2022 Program as at 2 November 2022
Virtual Event, 10 November 2022 in Arizona and Britain,
11 November 2022 in Australia and Hong Kong
https://www.istas22.org/

Themes to be addressed include, but are not limited to

- Definitions of securitization in the context of sustainability of people and place
- Contexts and sectors of social securitization and new security policy
- Non-military aspects of national security
- All hazards approach to national security, with an emphasis on social implications of technology
- The social implications of national security technologies in the context of sustainability
- Challenging the concept of “national” in “national security”, to extend to other geographic areas and or the digital landscape
- Role of values such as human rights, care, peace, trust, respect in non-military securitization practices
- Engagement between a range of stakeholders (e.g., defense and community) regarding prevalent national security issues, e.g. biosecurity, peacekeeping, recycling, cybersecurity
- Human-centered and empathetic design approaches for addressing securitization related challenges
- Communication strategies for public engagement related to shared responsibility in tackling complex challenges
- Bridging the gap between conceptual issues and real-world experiences in the context of securitization toward sustainability
- Developing transdisciplinary language for addressing technology-related securitization challenges
- Transdisciplinary design frameworks for large-scale innovation systems focused on securitization
- Investing in prevention of major global challenges at the local level and understanding the long-term effects of non-participation in national security
- Sustainability in urban areas and risks to urban dwellers
- Integration of cultural values, belief systems, language, philosophical approaches, and practices in local (and especially remote) communities
- Migration patterns, especially of workers, between nation states
- Sustainable and secure supply chains
- The role of technology in the securitization of global supply chains
- Cyber-physical supply chain security
- Transnational crime prevention strategies through new approaches to securitization
References


Citation: Roba Abbas, Katina Michael, Jeremy Pitt, Kathleen Vogel, Mariana Zafeirakopoulos, 10-11 November 2022, “Securitization for Sustainability of People and Place: A Call to Transdisciplinarity”, SINS22, https://www.istas22.org/call-for-papers/sins22/
The SINS 2022 Program is co-located with ISTAS22, incorporating 35 speakers from 10 countries over 4 time zones, beginning on the 10th November with Arizona at 9am local time, then London at 9pm at local time, and Sydney at 11am local time, and Hong Kong at 1pm local time.

In order to attend SINS22, you must register via Town Hall. You will be provided one zoom link for the whole day’s proceedings. Registration is free.

### Thursday 10 November 2022 – Securitization of the Person

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 1 (09:00am Arizona (MST), 11am EST, 4pm UTC, 3am +1 Sydney)</th>
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<tbody>
<tr>
<td>9:00am AZ</td>
<td>Securitization of the Person</td>
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<td>Moderated by Kathleen Vogel</td>
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<tr>
<th>Time</th>
<th>Panel 1 (9:30am Arizona (MST), 11:30am EST, 4:30pm UTC, 3:30am +1 Sydney)</th>
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<tr>
<td>9:30am AZ</td>
<td>9:30am Discovery, Modeling and Interdiction of Human Trafficking Networks</td>
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<tr>
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<td>Dominique Roe-Sepowitz, Jorge Sefair, Tony Grubesic and Arunabha Sen</td>
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<td>10:00am</td>
<td>10.00am COVID-19 and Emergencies as Determinants of Anti-Trafficking Efforts</td>
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<td>Jean-Pierre Gauci and Noemi Magugliaan</td>
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<td>10.30am</td>
<td>10.30am Critical Collaboration: Combating Fragmentation and Duplication in Counter-Trafficking</td>
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<td>Sherrie Caltagirone</td>
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<tr>
<td>11.00am</td>
<td>11.00am Responsible AI for Addressing Human Security Challenges</td>
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<td>Anjali Mazumder</td>
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<td>11.30am</td>
<td>11.30am Discussion</td>
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<td>Open Floor</td>
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<td>12.00pm</td>
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Thursday 10 November 2022 – Securitization of Place

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<tr>
<th>Time</th>
<th>Session 2 (2:00pm Arizona (MST), 4pm EST, 9pm UTC, 8am +1 Sydney)</th>
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| 9:00pm London | Securitization of Place  
Moderated by Jeremy Pitt |

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<thead>
<tr>
<th>Time</th>
<th>Panel 2 (2:05pm Arizona (MST), 4:05pm EST, 9:05pm UTC, 8:05am +1 Sydney)</th>
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</table>
| 9:05pm London | 9.05pm Sustainable Smart Cities: Testbed Infrastructure and Human Behaviour  
V. Cvetkovic, A. Fontan, M. Molinari, K.H. Johansson, P. Herman, M. Skoglund, H. Kjellström and C. Katzef |
| | 9.25pm Counteracting the Global Labor Shortage Risk through the Human-AI Collaboration in Digital Recruiting  
Olena Linnyk |
| | 9.45pm Ensuring Food Security through Menu Optimization - OPTMEAL  
Liselotte Schäfer Elinder, Patricia Eustachio Colombo |
| | 10.05pm Q&A (with Vlad, Olena, Liselotte) |
| | 10.20 Break |
| | 10.40pm Reimagining Digital Public Spaces and Artificial Intelligence for Deep Cooperation  
Peter Lewis |
| | 11.00pm Energy Security  
Stephen McArthur |
| | 11.20pm Respecting and Protecting Cultural Values in an Indigenous Virtual Reality Project  
Holger Regenbrecht and Steven Mills |
| | 11.40pm Q&A (with Peter, Stephen, Holger and Steven) |
| | 12.00am Close |
## Friday 11 November 2022 – Securitization through Transdisciplinarity

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<tr>
<th>Time</th>
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<tr>
<td>11:00am</td>
<td>Session 3 (5:00pm Arizona (MST), 7pm EST, 12am UTC, 11am Sydney)</td>
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<tr>
<td></td>
<td>Securitization through Transdisciplinarity</td>
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<td>Moderated by Roba Abbas and Mariana Zafeirakopoulos</td>
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<td>11:05am</td>
<td>Panel 3 (5:05pm Arizona (MST), 7.05pm EST, 12.05am UTC, 11.05am Sydney)</td>
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<td>11.05am Climate Change, Critical Thinking and the New Normal</td>
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<td>Luis Kim</td>
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<td>12.00pm IEEE SSIT Open Discussion on Transdisciplinarity and Socio-Technical Considerations</td>
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<tr>
<td></td>
<td>Roba Abbas, Katina Michael</td>
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<td>12.30pm Vulnerable Infrastructure, Secure Infrastructures?</td>
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<td></td>
<td>Lindsay Robertson</td>
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<td></td>
<td>1.00pm Necessity, Luxury, or Illegal Protest: A Transdisciplinary Review of Internet Access</td>
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<td></td>
<td>Rob Nicholls</td>
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<td>1.30pm A Transdisciplinary Lens on the Ethical Use of Artificial Intelligence</td>
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<td>Antonette Shibani</td>
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<td>2.00pm Calling in the System - Exploring Relational Ways of Knowing for More Secure Futures</td>
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<td>Mariana Zafeirakopoulos</td>
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<td>2.30pm Cyber-Biosecurity Threats and Risks: Mitigation Challenges and Transdisciplinary Solutions</td>
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<td>Patrick Walsh</td>
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<td>3.00pm Why Do We Need “Transdisciplinarity” and What are the Pressures Against It?</td>
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<td>Marcus Wigan</td>
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<td>3.30pm Close</td>
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### Friday 11 November 2022 – Socio-Historical Origins of Securitization

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<tr>
<th>Time</th>
<th>Session 4 (10pm Arizona (MST), 12am EST, 5am UTC, 4pm Sydney)</th>
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<tr>
<td>1:00pm</td>
<td>Socio-Historical Origins of Securitization</td>
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<td>Moderated by Katina Michael</td>
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<td>1:05pm</td>
<td>Panel 4 (10:05pm Arizona (MST), 12:05am EST, 5:05am UTC, 4:05pm Sydney)</td>
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<td>1.05pm Vulnerable Agents and State Complexity: Sustainable Development as the Ethical Standard for Securitization Philip Chmielewski</td>
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<td>1.30pm Democracy, Environment, and Technology – Interactions, Inter-Dependencies, and Implications for Theory, Policy, Practice and Politics Elias Carayannis</td>
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<td>2.00pm Atticus Finch 5.0: The Critical Role of Elders in Mediating Securitization and Inspiring the Next Generation of Public Interest Technologists Jason Sargent</td>
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<td>2.30pm Secure Localization in a Global Software Intensive System Gopal Tadepalli</td>
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<td>3.00pm Looking at Securitization as a Sociotechnical Activity: Lessons from a Cold-War Past</td>
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<td>3.30pm Ubervellance as an Apparatus of Control: Towards Insecurity MG Michael, Katina Michael and Roba Abbas</td>
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ETHICS DAY @ ISTAS 2022

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<tr>
<th>Date</th>
<th>Time</th>
<th>Session Title</th>
<th>Chair</th>
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<tbody>
<tr>
<td>12 Nov 2022</td>
<td>1PM - 2:30PM [HKT]</td>
<td>Session #1: Law and autonomous systems</td>
<td>Kieran Tranter</td>
</tr>
<tr>
<td>12 Nov 2022</td>
<td>2:30PM - 4PM [HKT]</td>
<td>Session #2: Gender and Technology: How can gender</td>
<td>Reihana Mohideen</td>
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<td>considerations be incorporated in technology development?</td>
<td>Principal Advisor on 'social implications of technology', Nossal Institute and Melbourne Energy Institute Fellow, The University of Melbourne, Australia</td>
</tr>
<tr>
<td>12 Nov 2022</td>
<td>9PM - 10:30PM [HKT]</td>
<td>Session #3: International perspectives on engineering ethics education</td>
<td>Joe Herkert</td>
</tr>
<tr>
<td>12 Nov 2022</td>
<td>10:30PM - 12:00 Midnight [HKT]</td>
<td>Session #4: Canadian Approaches to Cultivating “Ethical Thinking” in Engineering Education</td>
<td>Heather A. Love, University of Waterloo, Ontario</td>
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Chair: Prof. Greg Adamson

The IEEE Society on Social Implications of Technology (SSIT)’s Field of Interest [2022] reads: “To facilitate understanding of the complex interaction between technology, science and society, including impact on individuals and society in general, ethics, professional and social responsibility in the practice of engineering, science and technology, and open discussion of the resulting issues”.

The inclusion of the word ethics in the IEEE SSIT Field of Interest happened in 2022. Prof. Greg Adamson, Chair, Advisory Committee, ISTAS2022 has readily agreed to organize an ETHICS DAY on 12 November 2022 during ISTAS2022.

Tentative Schedule:

**Session #1: Law and autonomous systems**

Chair: Kieran Tranter

Kieran Tranter is the Chair of Law, Technology and Future in the School of Law, Queensland University of Technology. Kieran joined the School of Law, Queensland University of Technology in 2019 and is the founding General Editor of Law, Technology and Humans.

From driverless cars and supply chain automation to autonomous weapons systems and cyber capabilities, autonomous and AI enabled systems are increasingly prevalent in society and affecting the lives of humans. These technologies can have a range of positive and negative impacts raising a range of questions about the role of law in shaping and limiting their development and use. Are existing legal frameworks compatible with these technologies, and can the law keep up with the pace of technological innovation? What legal issues arise from the autonomous functionalities of these systems, and do they differ in a meaningful way from systems controlled by humans in real-time? What approaches have been taken to regulate the development and use of these systems in different contexts, and what lessons can be learned for the future regulation of autonomous and AI enabled systems? This panel of specialists in law and technology, convened by SSIT Australia, will discuss these questions and current trends about how law is responding to these changes, as well as how technology is changing law.
Elizabeth T. Williams is a Senior Lecturer at the 3A Institute within the School of Cybernetics at the Australian National University (ANU). She completed her PhD in experimental nuclear structure at Yale University in December 2009 before commencing postdoctoral work in fundamental and applied nuclear physics at Yale and CSIRO. Liz joined the ANU in 2012, where she held an ARC DECRA fellowship. She has created and used cyber-physical systems to carry out her research in nuclear science, and has always had a fascination with how complex systems come together in a human context. Her passion for research impact and the responsibilities that researchers have to imagine the context in which their research will be used led her to the 3A Institute (now part of the School of Cybernetics) in 2018. Her current research focuses on the design of trustworthy and inclusive autonomous systems for safety-critical contexts. She is also convenor of the School of Cybernetics 2021 PhD cohort, manager of the Algorithmic Futures Policy Lab, and creator and co-host of the Algorithmic Futures Podcast.

Henry Fraser is a Research Fellow in Law, Accountability and Data Science at the Centre for Automated Decision-Making and Society at QUT. His research is about how to use and develop civil liability laws to promote responsible automated decision-making (ADM). His work aims to:

- strengthen incentives for good practice in ADM by clarifying to developers and deployers their legal responsibilities (and risks);
- map out pathways for victims of ADM-caused harms to achieve redress; and
- identify the best targets for regulatory intervention.

His interests include the legal and conceptual foundations for attributing responsibility for the decisions and actions of ADM systems, questions about how to set the standard of care for ADM in both ex ante safety and compliance regimes and ex post civil liability doctrines, and the practical challenges and opportunities for using the law to promote accountable ADM.

Mark Brady is a lecturer in law at Charles Darwin University, Australia. Mark’s research examines law, society and technology, with a focus on automated vehicles, robotics and artificial intelligence. Drawing upon critical legal studies, the humanities and the social sciences, it examines how humans legislate, interact with, and are affected by technology. In researching law and technology this research engages with practical, cultural, and sociological narratives that link humans, law, technology and the future. The goal of this research is to understand the trajectory of humanity’s legal and technological future. It is interdisciplinary research that draws on law and technology theory to consider the legal, sociological and ontological issues raised by disruptive Ai technology in this context, and examines how law and technology shape each other.

EJ Wise is principal lawyer at WiseLaw, Australia. Prior to working in private practice, EJ Wise had 25 years legal experience in Australian Federal and State Governments, specialising in cyber law, policy, advice, international law, administrative & criminal law and is an internationally recognized cyber law expert. During her 21 years of service in uniform as a Legal Officer with the Royal Australian Air Force, EJ volunteered at the Townsville Community Legal Centre and in the International Humanitarian Law Committee of the ICRC. Her service in the RAAF included deployment twice into armed conflict in the Middle East, the RAAF’s cyber and information operations squadron, and on exchange with the United States Air Force’s JAG Corp in the Pentagon. EJ has assisted in drafting laws and relevant texts and manuals in Australian, International and US jurisdictions. She has assisted in law enforcement as well as cyber operations. EJ has strong community values and gives her time to community and not for profit organisations as her contribution to a fairer, more inclusive and equitable society for everyone.

Tarisa Yasin is a PhD candidate at Bond University, Australia. Tarisa’s research is in the area of public international law where international relations and the law intersect. Her current research involves
examining the current challenges to international humanitarian law posed by the growing development and use of lethal autonomous weapon systems. Specifically, it examines the concept of human control over autonomous weapon systems.

Session #2: Gender and Technology: How can gender considerations be incorporated in technology development?

Chair: Reihana Mohideen, Principal Advisor on ‘social implications of technology’, Nossal Institute and Melbourne Energy Institute Fellow, The University of Melbourne, Australia.

Dr Reihana Mohideen is an electrical engineer with nearly twenty years’ experience as an international development specialist working on energy and power systems. She has been supporting ADB efforts to mainstream gender equality and social inclusion approaches in its energy portfolio in South Asia. Her work increasingly straddles the social and gender issues related to a ‘just’ low-carbon energy transition, including in greening health systems. Reihana is currently establishing a center of excellence in this space at the University of Melbourne. She is the Chair of the GESI Workstream, DIITA program, IEEE Standards Association.

This session will present the work of the Workstream on Gender Equality and Social Inclusion (GESI), as a part of the IEEE Standards Association Dignity, Inclusion, Identity, Trust and Agency IEEE Industry Connections activity. The GESI workstream draws from over ten years of development practice integrating GESI interventions in power sector projects in developing countries, amounting to over a billion dollars in investments. The Workstreams methodology and tools draw from this body of work. The activities of the workstream overlap with the scope of the Dignity, Inclusion, Identity, Trust and Agency IEEE Industry Connections activity, specifically to identify barriers to gender equality and social inclusion with a focus on technical standards for affordability and accessibility that support the progress of practical technologies to address these barriers. Accepting the premise that “Equality between women and men is a human right issue” a key question that the session will address is “How can GESI considerations be incorporated in the development of technology?” or “What planning and policy framework is required to ensure that GESI considerations are adequately addressed in the development and the adoption of technology?”

In doing so, a multidisciplinary team of experts, will discuss the following related aspects:

- A historical perspective of ‘Gender and Technology’
- Key lessons from the Covid pandemic
- Existing policy frameworks – UN policy and SDGs, IEEE code of ethics
- GESI considerations in energy production, distribution and use – barriers, women’s unpaid labor time, GESI benefits of electrification
- Pathways — Women in STEM employment and education, policy and ‘policy evaporation’

Facilitator: Iven Mareels, Executive Dean, Federation University Australia

Biography:

Since Oct 2022, Iven Mareels is the Executive Dean, Institute for Innovation, Science and Sustainability, Federation University Australia. He is also a Director of the Australian Academy of Technology and Engineering, and a non-executive Director of Rubicon Water.

Previously, he was a partner in IBM Consulting and Director of the Centre for Applied Research, IBM Australia (April 2021-Aug 2022); Director of IBM Research in Australia (Feb 2018- Mar 2021); Dean of Engineering at the University of Melbourne (2007-2018).

Iven received the PhD in Systems Engineering from the Australian National University (1987), and the Master of Engineering (Electromechanical) from Gent University (1982).
He has co-authored over 500 refereed publications, including 5 monographs. He is a co-inventor of a suite of patents related to the automation of large scale, gravity fed, irrigation systems.

Iven has received a number of awards, including a 2021 IBM Research Achievement Award (bronze level); 2017, Harold Chestnut Control Engineering Textbook Prize; 2014 IEEE Control Systems Society Technology Award; 2013 Asian Control Association Wook Hyun Kwon Education Award; 2008 Clunies Ross Medal.

He was made a Commander in the Order of the Crown of Belgium, and received the Centenary Medal of Australia for contributions to engineering education and research.

He is a Fellow of The Academy of Technological Sciences and Engineering Australia; The Institute of Electrical and Electronics Engineers (USA), the International Federation of Automatic Control (Austria) and Engineers Australia and he is a Foreign Member of the Royal Flemish Academy of Belgium for Science and the Arts.

Panelists:

Anna Åberg, Chalmers University of Technology, Sweden

Anna Åberg is an associate professor at Chalmers University of Technology, Gothenburg, Sweden. Åberg is a historian of technology, with a focus on energy- and resource history, and narratives of science and technology in popular culture. Her research themes include international fusion research, Swedish uranium imports, and narratives of energy and the environment in popular culture. She currently leads a project on Swedish oil history, as well as holds the role of task leader for the IEA UsersTCP Task on Gender and Energy.

Greg Adamson, Chair of Dignity, Inclusion, Identity, Trust and Agency, an IEEE Industry Connection

Greg has 30 years’ experience in the field of cybersecurity, and is currently working in the transport sector in Australia. He is the Technical Activities Vice-President of the IEEE Society on Social Implications of Technology; chair of the IEEE Standards Association program Dignity, Inclusion, Identity, Trust and Agency (DIITA); and is an honorary Associate Professor at the University of Melbourne School of Population and Global Health.

Peter Annear, The University of Melbourne, Australia

Peter Annear is Honorary Professor at the Nossal Institute for Global Health, the School of Population and Global Health, The University of Melbourne. He was previously a Principal Advisor and former Head of the Health Governance and Financing Unit at the at the Nossal Institute. Prof. Annear is a health economist and health financing specialist who has worked in international development in various capacities since the 1970s, with more than 25 years’ experience working in the health sector in Cambodia, Laos and a number of Asian countries as a consultant and advisor for Ministries of Health and development agencies.

Pankaj Batra, Project Director SARI/EI at IRADe & Ex Chairperson, Central Electricity Authority, India

Shri Pankaj Batra did his B.Tech in Electrical Engineering, Diploma in Systems Management, Diploma in Financial Management and Diploma in Public Speaking. He is currently Project Director, USAID’s SARI/EI (South Asia Regional Initiative in Energy Integration) program being implemented by IRADe, a reputed think tank in Asia, dealing in all aspects of promoting cross border trading in energy in South Asia. He was earlier Chairperson and CEO of the Central Electricity Authority (CEA), Government of India, responsible for overall development of the Indian power system including Hydro, Thermal and Renewable Power as well as the Transmission & Distribution System of the country. He was also the Member (Planning) of CEA, dealing with various policy and planning functions, including Electric Power Survey Report on long term demand forecasting, National Electricity Plan on generation planning, coal and gas supply to power stations, renewable sources of energy, etc.
He has worked in the Western Regional Load Despatch Centre (WRLDC) as a System Operator.

He was also responsible for operation and maintenance of Power House, Switchyard and Dam in Chukha Hydro Power Corporation in Bhutan and later operation and maintenance of transmission and distribution system of Bhutan.

He framed the regulations of CEA on Technical Standards for Connectivity to the Grid and regulations on Grid Standards.

He has worked as Chief (Engineering) in Central Electricity Regulatory Commission (CERC) formulating various Regulations, like the Indian Electricity Grid Code, Connectivity Regulations, Sharing of Transmission Charges of the Inter-State Transmission System, etc.

He was Chairperson/Member Secretary of the many Task Forces/Committees of the Government of India, when in CEA, including on Peaking Power Plants and Creation of Adequate System Reserves;

Integration of electricity from Renewable Energy sources in the Grid; Technical Committee On Study Of Optimal Location Of Various Types Of Balancing Energy Sources/Energy Storage Devices To Facilitate Grid Integration Of Renewable Energy Sources And Associated Issues; Preparing an approach paper for charging of electric vehicles including the facility, institutional arrangement and identification of regulatory interventions, if any.

He is presently the Chairperson of Working Group 4 on “Policy, Regulation and Business Models” in the India Smart Grid Forum; Chairperson of the BIS Committee for making technical Standards on Grid Scale Storage; member of the expert group of Niti Aayog for Energy Sector Vision Document.

Rashi Gupta, Vision Mechatronics Pvt Ltd, India

Dr. Rashi Gupta, fondly known as “Batterywali of India”, is the pioneer of manufacturing of Advanced Lithium Batteries in India alongwith the “Worlds Smartest Lithium Battery”. She is the Founder & Managing Director of Vision Mechatronics Private Ltd, leading it towards a name to reckon for in the field of Robotics, Renewable Energy & Energy Storage. A Women Entrepreneur who has been fearless & ferocious in creating a brand for herself & the company in these male dominated fields.

If one takes a closer look at the alchemy of this achiever, two distinct virtues pop up, besides perseverance & hard work. These are: pioneering spirit & willingness. Coupled with an impressive background, it was not therefore surprising that she became a prominent name in the Renewable Energy Sector of India and is featured as Asia’s Most Influential Women in Renewable Energy, 2020. She has been working on Gender Equality and Women Empowerment issues globally. She has been Awarded the “Global Women Leadership 2021”. She has also been featured amongst first 50 “Women in Stem by CII 2021” for her contribution and excellence in STEM field. She has been Awarded “Corporate Guru World Award 2021” for her work in SDG5 & SDG7. She is Featured among TOP 40 Global Women Leaders in Energy Storage 2022.

She is very passionate to work on Sustainable and Circular development is focused on SDG 5 & SDG 7. She has been working relentlessly for rural electrification to ensure that the rural schools in India get access to clean and green energy enabling them to be at par with the Urban schools. One such example is at a primary school at Katavaram, Andhra Pradesh. She is also collaborating with colleges and universities for development on Women in Stem and the preaching that has been effectively practised for Gender Equality is having equal representation of men and women in the organization she heads.

She holds degrees of BE, MBA, LLM, & PhD to her title. She is a committee member of Bureau of Indian Standards for Batteries, Energy Storage and E-Mobility. She is also Member of International ElectroTechnical Commission. She is also a committee member of National Energy Storage Committee-FICCI, Chairperson- Energy Storage Theme-International Solar Energy Society e. V.(ISES) for SWC2021, CleanTech Business Club- Chair of Task Force- Energy Storage & Smart Energy, Chairperson-Women’s India CleanTech Business Club, CleanTech Business Club Vice Chair India, Advisor-Energy Storage-India Smart Grid Forum (ISGF), Committee Member IEEE-GESI (Gender Equality and Social Inclusion), Committee Member – Women in RE, MNRE(Ministry of New & Renewable Energy)
Sally Musonye, Kenya Power, Kenya

Sally is a design and construction engineer at Kenya Power and founder of AshGold Africa Initiative; actively involved in mentorship, women empowerment, and community development. She holds a Bachelor of Science degree in Electrical Engineering from The University of Nairobi (UoN). She is a member of IEEE, a registered graduate engineer with the Engineers Board of Kenya (EBK) and a corporate member of the Institution of Engineers of Kenya (IEK).

Sally is a fellow of the inaugural Power Africa Young Women in African Power (WIAP) program and a YALI alumna. She is a recipient of the KPLC Excellence Award for outstanding performance, IEEE Kenya Section Women in Engineering (WIE) Achievement Award, Africa Queen of Energy – Philanthropy category award (2021), and the Presidential Commendation Trailblazer award (2022).

She volunteers for various teams such as: A member of the DIITA work stream on Gender Mainstreaming in the Energy Sector, Region 8 SAC- WIE Student Branch Affinity Groups coordinator, WIE Lead for IEEE Africa Council, and the East Africa representative for Women in Power under the Power and Energy Society (PES).

She has been a speaker, organizer and, facilitator in local and global conferences on Power, Energy, Leadership, and Strategic Plan development within IEEE and beyond. She has published a strategic paper on “The Role of Innovation in Operationalizing Decentralization of Organizational Operations in Utility Companies: Case Study of Kenya Power.”

Priyantha Wijayatunga, Asian Development Bank

Dr Priyantha D.C. Wijayatunga is currently the Chief of the Energy Sector Group in the Sustainable Development and Climate Change Department of the Asian Development Bank (ADB).

Priyantha has over 35 years of professional experience including more than 14 years in ADB. He was the Director, South Asia Energy Division prior to assuming the current position in August 2021. Before joining ADB, he served as the founder Director General of the Public Utilities Commission of Sri Lanka, a Senior Professor of Electrical Engineering at the University of Moratuwa and its founder Dean, of the Faculty of Information Technology. He has extensively contributed in the areas of energy policy and regulation, energy planning and clean energy development.

Priyantha holds a Doctorate in Power Systems Economics from the Imperial College London on Beit Scientific Research Fellowship and had been a regular Academic Visitor at Imperial College London during the period 1993-1998. He was the Chairman of the South Asia Forum for Infrastructure Regulators (SAFIR) in 2006/07 and was also a member of the Board of Directors of the Ceylon Electricity Board and Sri Lanka Sustainable Energy Authority. He was an Advisory Board member of the Melbourne Energy Institute at the University of Melbourne during 2016-2019.

He is a Chartered Electrical Engineer, a Member of the Institute of Engineering Technology (IET), UK, Senior Member of the Institute of Electrical and Electronic Engineers (IEEE) and a Fellow of the Institution of Engineers Sri Lanka. He is a Past President of the Sri Lanka Energy Managers Association (SLEMA).
Session #3: International perspectives on engineering ethics education

Chair: Joe Herkert

Joe Herkert is Associate Professor Emeritus of Science, Technology, and Society at North Carolina State University. He is Co-Program Chair of IEEE ETHICS-2023 to be held at Purdue University May 18-20, 2023, and Chair of the IEEE-SSIT Committee on Ethics and Human Values. His teaching and research interests include engineering ethics, ethics and emerging technologies, and engineering ethics education. He is a Fellow of the American Society for Engineering Education, a Fellow of the American Association for the Advancement of Science, and an IEEE Life Senior Member.

This panel, featuring prominent engineering educators based in four countries, will discuss significant issues and innovative engineering ethics education research and pedagogy. The panel will consist of three parts: brief introductory presentations by the panelists, discussion by the panelists of questions posed by the moderator, and an opportunity for audience questions and comments. Topics to be covered by the panelists include: “positive engineering education” which combines traditional academic and professional education with “well-being” education based on the findings of well-being science (Fudano); teaching using case studies provided by external stakeholders, and how this approach enhances the focus on ethics both of the students and of the stakeholders within a university ecosystem (Martin); engineering ethics education in China (Tang); and how first year engineering students from the United States, China, and Netherland perceive professional values in engineering differently (Zhu).

Panelists

Jun Fudano, Waseda University

Jun Fudano is Professor in the Center for Higher Education Studies at Waseda University. He formerly was Professor of Science and Engineering Ethics at the Tokyo Institute of Technology (Tokyo Tech) and Professor of Science and Engineering Ethics at the Applied Ethics Center for Engineering and Science at the Kanazawa Institute of Technology (KIT). He has been instrumental in promoting engineering and science ethics education in Japan and taught at various universities, research institutes, and companies including the University of Tokyo, Hitachi, and Tokyo Electric Power Company. He has been a Visiting Professor at the Open University of Japan, where he developed TV courses on engineering ethics and has been involved in planning and implementing an ethics program in various organizations, including the Japan Society of Mechanical Engineers and the Japanese Society for Engineering Education. In the Science Council of Japan, he was a member of the special committee which formulated the Code of Conduct for Scientists in 2006. He was elected as a fellow of the Japanese Society of Mechanical Engineers in 2018 and was a member of the World Commission of the Ethics of Scientific Knowledge and Technology (COMEST) of UNESCO from 2003 to 2009.

Joe Herkert is Associate Professor Emeritus of Science, Technology, and Society at North Carolina State University. He is Co-Program Chair of IEEE ETHICS-2023 to be held at Purdue University May 18-20, 2023, and Chair of the IEEE-SSIT Committee on Ethics and Human Values. His teaching and research interests include engineering ethics, ethics and emerging technologies, and engineering ethics education. He is a Fellow of the American Society for Engineering Education, a Fellow of the American Association for the Advancement of Science, and an IEEE Life Senior Member.

Diana Adela Martin, Eindhoven University of Technology

Diana Adela Martin is a postdoctoral researcher with the SCALINGS project in the Philosophy and Ethics Group at Eindhoven University. Her areas of expertise are engineering ethics, responsibility, and engineering education. Within engineering education, Diana’s main research is on ethics in the context of engineering accreditation and how ethics, sustainability and societal aspects are taught and implemented in the engineering curricula. She also has experience developing teaching materials and case studies on engineering ethics and sustainability. Dr. Martin was a guest speaker at the invitation of The European Commission DG Research & Innovation, Euraxess Japan & Delegation of EU to Japan, the European Forum Alpbach, Délégation Wallonie Bruxelles a Bucarest,
Engineers Ireland, University College London, the SATORI FP7 project on themes ranging from engineering ethics to social entrepreneurship and research policy.

**Xiaofeng “Denver” Tang, Tsinghua University**

Xiaofeng “Denver” Tang is Associate Professor and Associate Director, Division of Engineering Education Research at Tsinghua University. His scholarship focuses on understanding and facilitating engineering education reform, through which he seeks to educate engineers who can demonstrate leadership, responsibility, and innovation. Inspired by sociology, ethics, history, and educational research, he teaches and conduct interdisciplinary research in engineering ethics, international engineering education, and engineering cultures. He has been honored as a major contributor to the US National Academy of Engineering “Exemplars in Engineering Ethics Education” and as the “KEEN Rising Star” at The Ohio State University. His research is published with journals like the Journal of Engineering Education, Engineering Studies, and International Journal of Engineering Education.

**Qin Zhu, Virginia Tech**

Qin Zhu is Associate Professor in the Department of Engineering Education at Virginia Tech. He was formerly at the Colorado School of Mines in the Department of Humanities, Arts & Social Sciences and an affiliate faculty member in the Department of Engineering, Design & Society, and the Robotics Graduate Program. Dr. Zhu is Editor for International Perspectives at the Online Ethics Center for Engineering and Science, Associate Editor for Engineering Studies, Past Chair of American Society for Engineering Education’s Division of Engineering Ethics, and Executive Committee Member of the International Society for Ethics Across the Curriculum. Dr. Zhu’s research interests include the cultural foundations of engineering (ethics) education, global engineering education, and ethics and policy of computing technologies and robotics.

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**Session #4: Canadian Approaches to Cultivating “Ethical Thinking” in Engineering Education**

Chair: Heather A. Love, University of Waterloo, Ontario

This panel builds from the ISTAS21 theme (“Responsible Innovation and Technological Stewardship”) and geographic location (Ontario, Canada) to discuss how Canadian university engineering programs are fostering “ethical thinking” in students—that is, how they are encouraging students to develop their awareness of and ability to engage more ethically with the social, cultural, environmental implications of their future work in tech fields. Panelists’ opening presentations will cover topics that range from (a) broader overviews of patterns, trends, and strategies that characterize Canadian approaches to engineering ethics education, to (b) discussions of several specific initiatives that have been implemented at different academic institutions over the past decade (including course-based, cross-disciplinary, and program-level activities). The group will then engage in a moderated discussion of the successes, challenges, and future directions of this work, and in conversation with the audience, they will reflect on the ways in which Canadian experiences can translate to broader global contexts.
Panelist

**Brandiff Caron**, *Lecturer in the Science, Technology, and Society Program in the Interdisciplinary Studies in Liberal Arts Department at Cal Poly*

Dr. Caron holds a PhD in Science and Technology Studies from Virginia Tech and has been teaching ethics of technology for 18 years. Before moving to Cal Poly, Dr. Caron taught ethics in the Gina Cody School of Engineering and Computer Science for a ten years. There, he developed constructive technology assessment tools for open-ended engineering design courses that allowed undergraduate engineering and computer science students to systematically incorporate social, ethical, and legal aspects into the technical design iterations students implemented.

**Marjan Eggermont**, *Professor (Teaching), Mechanical and Manufacturing Engineering, Schulich School of Engineering, University of Calgary*

Marjan Eggermont is a Professor (Teaching) in The Schulich School of Engineering at the University of Calgary working in the areas of (bio-inspired) design, information visualization, and technology and society. Marjan is currently Academic Director of Sustainable Engineering and co-developed the new Sustainable Systems Engineering major. With co-editors Tom McKeag (San Francisco) and Norbert Hoeller (Toronto) Marjan started the open-source bio-inspired design journal, Zygote Quarterly in March 2012.

**Jason Millar**, *Assistant Professor and Canada Research Chair in the Ethical Engineering of Robotics and AI at uOttawa, and Distinguished Research Director at the Partnership on AI*

Dr. Jason Millar holds the Canada Research Chair in the Ethical Engineering of Robotics and AI and is an Assistant Professor at the University of Ottawa’s School of Engineering Design and Teaching Innovation, with a cross-appointment in the Department of Philosophy. He is also the Distinguished Research Director at Partnership on AI. His research interests include developing transdisciplinary frameworks, tools and methodologies that empower engineers, policymakers, and ethicists/philosophers (and others) to integrate ethical thinking into their daily workflow, and has focused on applications in automated vehicles, natural language processing, healthcare robotics, social and military robotics. He has authored book chapters, policy reports, and articles on the ethics, design, and governance of robotics and AI. Jason has consulted internationally on policy, and ethical engineering issues in technology, and has provided expert testimony on autonomous weapons at the Senate of Canada and the UN. His work is regularly featured in the media, including articles in WIRED and The Guardian, and interviews with the BBC, CBC and NPR. He recently authored a chapter titled Social Failure Modes in Technology and the Ethics of AI: An Engineering Perspective, for the Oxford Handbook of Ethics of AI (OUP).

**Janna Rosales**, *Associate Professor (Teaching), Faculty of Engineering and Applied Science, Memorial University of Newfoundland*

Janna Rosales works at the crossroads of the sciences and humanities, where she explores the intent, values, and needs that go into the decisions we make about technology. She teaches ethics and professionalism in the Faculty of Engineering and Applied Science at Memorial University of Newfoundland, where her teaching and scholarly work are largely motivated by the question “How do we build a better engineer for the 21st Century?” A committed educator, she received the President’s Award for Outstanding Teaching (Lecturers and Instructional Staff) for 2020, the Dean’s Award for Teaching Excellence in 2021, and held the Chair for Teaching and Learning for the Faculty of Engineering from 2015-2017. She uses her training in the humanities to contribute to various local and national initiatives devoted to equity and inclusion in engineering education and to conduct research on the relationship between reflective practices and professional identity in engineering. She collaborates with the Memorial University-based MetaKettle
Project, which studies the theory and practice of integrative engineering education, and has led public engagement initiatives that explore the role of mindfulness in engineering.

Cindy Rottmann, Associate Director (Research), Institute for Leadership Education in Engineering (ILead)/Institute for Studies in Transdisciplinary Engineering Education and Practice (ISTEP), University of Toronto

Cindy Rottmann is the Associate Director, Research, Troost ILead/ISTEP at the University of Toronto. Her collaborative, interdisciplinary research focuses on engineering leadership, career paths, ethics and equity in classroom and workplace settings. She is the current Division Chair of the Engineering Leadership Development Division of ASEE. Most directly related to this conference, Cindy has led the engineering ethics and equity case study project—an evidence based curricular integration project involving 22 original case studies based on critical incidents faced by engineering students and professionals. Cindy comes to engineering ethics education indirectly, with training in educational leadership, EDI, and policy studies. As such, she will be focusing on the importance of infusing equity into engineering ethics education.
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