

2022 IEEE International Symposium on Technology and Society (ISTAS 2022)

**Hong Kong
10-12 November 2022**



**IEEE Catalog Number: CFP22SIT-POD
ISBN: 978-1-6654-8411-4**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22SIT-POD
ISBN (Print-On-Demand):	978-1-6654-8411-4
ISBN (Online):	978-1-6654-8410-7
ISSN:	2158-3404

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Preface	
ISTAS 2022 Preface	1
<i>Gopal Tadepalli</i>	
Plenary Session	
IEEE SSIT ISTAS 2022 Presidents Message	4
<i>Clinton Andrews</i>	
ISTAS 22 Inaugural Talk	5
<i>Maxine Cohen</i>	
The Measurement and Optimization of ICT Energy Consumption	6
<i>Erol Gelenbe</i>	
Track 1: Kaleidoscoping Data	
Cyberfraud among Ghanaian youth: Routine Activity, Differential Association, Space Transition, and Social Exchange	12
<i>Hua Zhong and Aikins Amoako Asiama</i>	
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?	19
<i>Simone Herbert-Lowe</i>	
Cloud Computing Data Breaches in News Media: Disclosure of Personal and Sensitive Data	26
<i>David Kolevski, Katina Michael, Roba Abbas and Mark Freeman</i>	
”Resurrecting” dead celebrities: Editing and using remnant data of the deceased through AI	37
<i>Akiko Orita</i>	
An Analysis of Terms of Service and Official Policies with Respect to Sex Work	41
<i>Rasika Bhalerao and Damon Mccoy</i>	
Track 2: Integrated Digital Healthcare	
Inexplicable AI in Medicine as a Form of Epistemic Oppression	55
<i>Christian Herzog</i>	
Vaccination, Values, and Health Information Search Behaviour in the New Folk Medicine .	60
<i>Jordan Richard Schoenherr</i>	
Reexamining the ethical, legal, social, and cultural implications for cochlear implants through a novel neuroethics framework	70
<i>Noeline Prins, Rebecca Monteleone, Joana Soldado-Magraner, Joanne Nash, Michael J. Young and Laura Cabrera</i>	

”Only the Old and Sick Will Die” – Reproducing ‘Eugenic Visuality’ in COVID-19 Data Visualization	76
---	----

Rua Williams

How Mobile Health Technologies Can Transform Social Relationships in a Population-Level Fitness Promotion Campaign	81
--	----

Stephen Fernandez and Suzanne Seah

Track 3: 5G Technologies with a Lite Touch on 6G

5G TECHNOLOGIES WITH A LITE TOUCH ON 6G	N/A
---	-----

Ramachandran Tv and Arun Mukerji

Track 4: UN SDGs and Basic Sciences

Prioritizing Inclusion in Urban Development	90
---	----

Cris Greer

SOCIAL VULNERABILITY IN THE CONTEXT OF WATER INFRASTRUCTURE MANAGEMENT	94
--	----

Rebecca Dziedzic and Ketra Schmitt

Developing a Roadmap for Tracking Sustainability in Bioenergy Transitions	100
---	-----

Saurabh Biswas, Chrissi Antonopoulos, Tim Seiple, Craig Bakker, Michael Walsh and Andre Coleman

The Internet Backpack: Transforming STEM Education, Agriculture and Economic Development in Liberia, West Africa	109
--	-----

Prasanta Ghosh, Danielle Smith, Lee McKnight and Mathin Torto

Electricity Consumption and Environmental Impact Reduction Measures in Public Blockchain	114
--	-----

Yusuke Kaneko

FARmAPP: a process-driven solution to prevent and oppose illegal recruitment in agriculture in Northern Italy	120
---	-----

Matteo Mantovani and Carlo Combi

Applying virtual stories to enhance University students’ learn-to-learn competence for practicum preparation: an empirical exploratory study	128
--	-----

Jessica C.M. Li

From Responsible Innovation to Interrelational Technology Development	133
---	-----

Alycia de Mesa

Improving Educational Standards Using Visualization Dashboards for Decision Making ...	139
--	-----

Justin Colyar, Katina Michael, Ross Maciejewski and Luke Tate

Space Exploration and Sustainable Development	144
---	-----

Madison Macias, Eric Stribling, Tasha Coelho, Malaika Malik, Sarthak Bhardwaj and Bo Manuszak

Track 7: Town Hall on ”Internet Governance”

TOWN HALL ON "INTERNET GOVERNANCE"	N/A
<i>Izumi Aizu and Gopal Tadepalli</i>	

Track 8: Robotics and Automation

Chatbots and explainable artificial intelligence	153
<i>Marcus Wigan, Greg Adamson, Priya Rani, Nick Dyson and Fabian Horton</i>	
Social Categories in Cyberspace: Frequency Effects and Trust in Media	158
<i>Jordan Schoenherr</i>	
Can strategic resilience coexist with lean approaches? A case study of the aviation industry	165
<i>Martin Zorrilla, Ali Akgunduz and Ketra Schmitt</i>	
Facial Emotion Recognition and the Future of Work	170
<i>Nickolas Dodd, Haowen Fan, Parth Khopkar, Francis Mendoza, Edgard Musafiri Mimo, Yatiraj Shetty, Riley Tallman and Katina Michael</i>	
Is Algorithmic Personalized Pricing Unjust?	179
<i>Christian Herzog</i>	

Track 9: Bioengineering

The impact of the democratization of technologies in vulnerable groups, artisans and micro-entrepreneurs. The role of Mobile Fab Labs	184
<i>Pablo C. Herrera and Macarena Valenzuela-Zubiaur</i>	
Just-in-Time Transnational Organized Crime: Just Another Adaptive Supply Chain	190
<i>Katina Michael</i>	

Track 10: Technology, Ethics and Evolving Standards

Assessing ethics in Problem-based Learning volunteer experiences	197
<i>Cristina Dreifuss-Serrano and Pablo C. Herrera</i>	
Autonomous Ferries and Cargo Ships: Discovering Ethical Issues via a Challenge-Based Learning Approach in Higher Education	201
<i>Christian Herzog, Noah-Art Leinweber, Stefanie Engelhard and Lars Engelhard</i>	
Critical Reflections on the Ethical Regulation of AI: Challenges with Existing Frameworks and Alternative Regulation Approaches	207
<i>Hayden Cooreman and Qin Zhu</i>	
Exploring the Perceptions of Professional Values among First-Year Engineering Students: A Cross-Cultural Comparison	212
<i>Andrea Gammon, Qin Zhu, Scott Streiner, Rockwell Clancy and Ryan Thorpe</i>	

Track 11: Social Choice and Decision Complexity

The Wholly Alliance: Psychographics Ethics and the Internet of Things	217
<i>Jordan Schoenherr</i>	

The Questionable Foundations and Implications of Money-Making Apps in China	225
<i>Yuanchu Song</i>	
A toolkit of dilemmas: Beyond debiasing and fairness formulas for responsible AI/ML	231
<i>Andrés Domínguez Hernández and Vassilis Galanos</i>	
Inclusion is Much More Than Access: STEM Capital and Agentic Strategies	235
<i>Robyn Ruttenberg-Rozen, Nichole Powell and Pamela Leggett-Robinson</i>	
Social Media Harms as a Trilemma: Asymmetry, Algorithms, and Audacious Design Choices	240
<i>Marc Cheong</i>	
Investigating Relationship Conflict within the Social Network of Large IS Projects using a SIR Model	248
<i>Yuyang Tang and Richard Williams</i>	
Informing Government Decision-Making with Online Citizen Feedback and Social Media: Pedestrianization of Streets	253
<i>Maria Jihan Sangil</i>	
Applying a Trustworthy AI Framework to Mitigate Bias and Increase Workforce Gender Diversity	260
<i>Xiang Michelle Liu and Diane Murphy</i>	
Gender Bias in AI Recruitment Systems: A Sociological- and Data Science-based Case Study	265
<i>Sheilla Njoto, Marc Cheong, Reeva Lederman, Aidan McLoughney, Leah Ruppanner and Anthony Wirth</i>	
Universal Acceptance as an Elixir for Multilingual Internet and Cybersecurity Considerations	272
<i>Harish Chowdhary and Dr. Naveen Kumar Chaudhary</i>	
Universal Access: A Sociotechnical Perspective of Broadband Internet Adoption in the Public Interest	280
<i>Leon Wilson</i>	
Towards place-based privacy: Challenges and opportunities in the "smart" world	285
<i>Hongyu Zhang and Grant McKenzie</i>	
Age Bias: A Tremendous Challenge for AI Algorithms in the Job Candidate Screening Process	289
<i>Christopher G. Harris</i>	
<hr/>	
ETHICS DAY	
<hr/>	
ETHICSDAY Summary	N/A
<i>Greg Adamson and Gopal Tadepalli</i>	