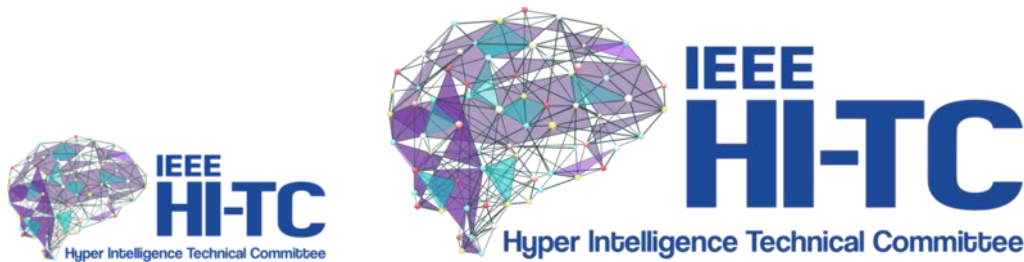


## IEEE SC Hyper-Intelligence TC Newsletter

- ✧ HITC Logo has been designed and released.
- ✧ CyberSciTech/DASC/PICom/CBDCom conferences
- ✧ A panel on human cognition and hyper intelligence

### HITC Logo



Logo Designer: Guillaume Fernandes (HITC member), University of Waterloo, Canada

### Logo Meanings:

- ✦ Hyper refers to higher/super forms intelligence, illustrated by the human brain which is at the center of creating intelligent ideas, innovations, and inventions.
- ✦ Mesh of interconnecting lines references the hyper-connection of many various intelligent entities in hyper intelligence.
- ✦ Interconnected dots can also represent artificial neural network, machine learning and deep learning, crucial learning mechanisms to achieve the most advanced smart systems.

### CyberSciTech/DASC/PICom/CBDCom 2021, Oct. 25-28 (Online)

The 6th IEEE Cyber Science and Technology Congress (CyberSciTech 2021)

The 19th IEEE Int'l Conference on Dependable, Autonomic & Secure Computing (DASC 2021)

The 19th IEEE International Conference on Pervasive Intelligence and Computing (PICom 2021)

The 7th IEEE International Conference on Cloud and Big Data Computing (CBDCom 2021)

They are sponsored by IEEE, hosted by Athabasca University, and Supported by HITC.

Welcome you to attend these conferences, in which about 150 technical papers will be presented.

More detailed can be found at: <http://cyber-science.org/2021/>

**A Panel on Human Cognition and Hyper Intelligence**

Panel Time: 10:00-11:40 a.m. EST, October 26, 2021 (online)

Panel Co-Chairs:

D. Frank Hsu, Fordham University, United States

Jianhua Ma, Hosei University, Japan

Panel Speakers:

Shinsuke Shimojo, California Institute of Technology, United States

✧ *“Upper Limits” and How to Break Them - in Relation to Somatic and Social Characteristics of Implicit Cognitive Processes*

Ryota Kanai, Araya Inc., Japan

✧ *Implementing Functions of Consciousness*

Christina Schweikert, St. John’s University, United States

✧ *Model Fusion: Combining Multiple ML/AI Models with Cognitive Diversity*

Michael David, National Intelligence University, United States

✧ *Hyper-Intelligent Supply Chain Developments and Risks*

Vincenzo Piuri, Università degli Studi di Milano, Italy

✧ *Ambient Intelligence: Convergence of Technologies for Smart Environments*

Panel Outline:

Human cognition is a complex neural process ranging from sensory-motor tasks to decision making. Hyper intelligence strives to accomplish complex tasks through creation or combination of diverse intelligent systems used by humans or machines based on a variety of methodologies, algorithms, and models in statistics, computation, and mathematics. Current panel HCHI will focus on various aspects of human cognition and hyper intelligence, as well as their relations and interactions. The five key panelists are active researchers and professionals who offer their perspectives on: cognitive process (Shimojo), functions of conscientiousness (Kanai), model fusion (Schweikert), supply chain development (David), and convergence of technologies (Piuri).

Panel webpage: <http://cyber-science.org/2021/panel/>

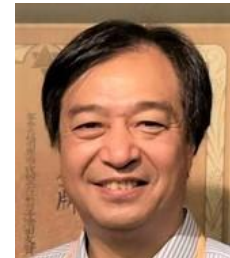
*All HITC members are welcome to attend the panel, which is an important HITC event.*

**Dr. D. Frank Hsu** (Life SM, IEEE) is the Clavius Distinguished Professor of Science, a Professor of Computer and Information Science, and director of the Laboratory of Informatics and Data Mining (LIDM) with Fordham University, New York, NY, USA. He was Visiting Professor at Keio University (as IBM Chair, 1991), JAIST (as Komatsu chair, 1993), Taiwan University in 1998, and DIMACS Special Years on Information Fusion at Rutgers University (2013-15).



Hsu has served on many editorial boards including IEEE Transactions on Computers (1992-96), on Reliability (2015-16), and Systems Journal (2018-2021). He contributes frequently to the IEEE CyberSciTech Congress and its affiliated conferences: DASC, PICom and Data Com. (<https://storm.cis.fordham.edu/~hsu>)

**Dr. Jianhua Ma** is a professor in the Faculty of Computer and Information Sciences, Hosei University, Japan. He is one of pioneers in research on Hyper World and Cyber World (CW) since 1996. He first proposed Ubiquitous Intelligence (UI) towards Smart World (SW), which he envisioned in 2004, and was featured in the European ID People Magazine in 2005. He has conducted several unique CW-related projects including the Cyber Individual (Cyber-I), which was highlighted on the IEEE Computing Now in 2011. He has founded IEEE Conferences on Ubiquitous Intelligence and Computing (UIC), Pervasive Intelligence and Computing (PICom), Cyber Physical and Social Computing (CPSCom), Internet of Things (iThings), and Internet of People (IoP). He is a chair of IEEE SC Technical Committee on Hyper-Intelligence, a co-chair of IEEE SMC Technical Committee on Cybermatics, and a founder of IEEE CIS Technical Committee on Smart World.



**Dr. Shinsuke Shimojo** is an experimental psychologist/cognitive neuroscientist, Gertrude Baltimore Professor in Division of Biology & Biological Engineering/Computation & Neural Systems at California Institute of Technology. He earned a Master's Degree from the University Tokyo, and a PhD from the Massachusetts Institute of Technology. His research has focused on sensory perception, its development and adaptation, sensory-motor coordination, multisensory integration, attention and consciousness, emotional decision making, etc. He is the recipient of awards, including the most creative research award (Japanese Society of Cognitive Science), Tokizane Memorial Award (Japanese Neuroscience Society), etc.



**Dr. Ryota Kanai** is a Founder & CEO of Araya, Inc. After graduating from the Faculty of Science at Kyoto University in 2000, he received his PhD (Cum Laude) in 2005 from Utrecht University in the Netherlands, where he studied human visual information processing mechanisms. After working as a researcher at California Institute of Technology in the U.S. and University College London in the U.K., and as a JST PRESTO researcher and Associate Professor of Cognitive Neuroscience at the University of Sussex in the U.K., he founded Araya, Inc. and worked full time there since 2015. He is engaged in research on the principles of consciousness in the brain and the implementation of consciousness in AI through the fusion of neuroscience and information theory. He has been also working on the practical application of AI and neuroscience in industry. He has received many awards, including the Young Scientist Award from the Ministry of Education, Culture, Sports, Science and Technology, the JEITA Venture Award (2020), the ET/IoT Technology Award (2019) among others as Araya Inc. From 2020, he is working on the practical application of brain-machine interface as a project manager of the Moonshot Project in the Cabinet Office.



**Dr. Christina Schweikert** is an Associate Professor of Computer Science at St. John's University and currently serves as program director for the M.S. in Data Science. After joining the University, she was granted a Clare Boothe Luce professorship. She completed her Ph.D. in Computer Science from the City University of New York, Graduate Center and has previously taught at Fordham University and the State University of New York. Dr. Schweikert's research interests include data and information fusion, computational intelligence, biomedical and healthcare informatics. She is a collaborator with Fordham University's Laboratory for Informatics and Data Mining.



**Dr. Michael David** has served on the faculty of the National Intelligence University (NIU), School of Science & Technology Intelligence since February 2014. He teaches courses on Cyber & Data Science issues. He is focused on cyber, supply chain, and critical infrastructure security issues. Previously, Dr. David worked for the Cubic Corporation of San Diego, Ca and served as vice president for international operations in Tokyo, New York City, Singapore and Brussels. His Ph.D. is from Kyushu University, Japan.



**Dr. Vincenzo Piuri** is Full Professor in computer engineering at the University of Milan, Italy (since 2000). He has been Associate Professor at Polytechnic of Milan, Italy and Visiting Professor at the University of Texas at Austin, USA, and visiting researcher at George Mason University, USA. His main research interests are: artificial intelligence, computational intelligence, intelligent systems, machine learning, pattern analysis and recognition, etc. He is Fellow of the IEEE, Distinguished Scientist of ACM, and Senior Member of INNS. He is President of the IEEE Systems



Council (2020-21) and IEEE Region 8 Director-elect (2021-22), and has been IEEE Vice President for Technical Activities (2015), IEEE Director, President of the IEEE Computational Intelligence Society, Vice President for Education of the IEEE Biometrics Council, Vice President for Publications of the IEEE Instrumentation and Measurement Society and the IEEE Systems Council, and Vice President for Membership of the IEEE Computational Intelligence Society. He has been Editor-in-Chief of the IEEE Systems Journal (2013-19). He received the IEEE Instrumentation and Measurement Society Technical Award (2002), the IEEE TAB Hall of Honor (2019), and the Distinguished Technical Achievement Award of the IEEE Communications Society Big Data Technical Committee (2020).

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