## IASC-ARS Interim Conference 2022

**The Interplay between Statistical Computing and Artificial Intelligence** 12-13 December 2022, Online

## **Programme Schedule**

https://www.eduhk.hk/iasc-ars2022/program-schedule.html

- Format: Online via Zoom
- Presentation time: 20-minute oral presentation + 5-minutes Q&A

## (All times are displayed in GMT + 8)

Day 1: 12 Dec	2022 (Mon)		
Time		Event (Room A)	
9:30 - 10:00		Opening Ceremony	
10:00 - 10:45		Keynote Speech #1	
10:45 - 11:00		Break	
	Room A	Room B	Room C
11:00 - 12:40	Invited Session #5	Invited Session #6	Invited Session #16
	Some Tools in Analyzing	Recent Developments in	Advances in Complex Time
	High Dimensional Data	Statistical Computing and	Series
		Data Analysis	
12:40 - 14:00		Lunch Break	
14:00 - 15:40	Invited Session #12	Invited Session #13	Invited Session #11
	High-dimensional and	Recent Advance in Statistical	Analyzing the Structure of
	Complex Statistical Models	Analysis that Affect	Scientific Articles
		Government and Health	
		Policy	
15:40 - 16:00		Break	T
16:00 - 17:40	Invited Session #9	Invited Session #2	Invited Session #15
	Advances and Applications	Econometric Analysis during	Recent Developments in
	in Clustering	Covid-19	Financial Time Series
17:40 - 18:40		IASC-ARS BoD Meeting	
Day 2: 13 Dec	: 2022 (Tue)	<b>_</b>	
Time		Events	D C
10.00 11.15	<b>Room A</b>	Koom B	Room C
10:00 - 11:15	Invited Session #1	Invited Session #3	Contributed Session
	New Development in	Modeling for complex and	
	Experimental Design	nign-aimensional data	
11.15 11.20	Related Researches	Dreat	
11:13 - 11:30 11:20 - 12:45	Institud Cassion #4	Break	Institud Cassion #9
11:50 - 12:45	Modeling Strategies in	Deep Learning and High	Statistical Computing for
	Count Data	Deep Learning and High-	Large scale Data
12.45 - 14.00	Count Duid	Lunch Break	Large-scale Dala
12.43 - 14.00 14.00 - 15.15	Invited Session #10	Invited Session #17	Invited Cassion #14
14.00 - 15.15			
	From Reports to Knowledge	AI and Data Analytics for the	Statistics and Its Application
	From Reports to Knowledge	AI and Data Analytics for the	Statistics and Its Application
	From Reports to Knowledge for Patient Safety	AI and Data Analytics for the Public Sector	Statistics and Its Application in Deep Learning
	From Reports to Knowledge for Patient Safety Improvement through Advancements in Artificial	AI and Data Analytics for the Public Sector	Statistics and Its Application in Deep Learning
	From Reports to Knowledge for Patient Safety Improvement through Advancements in Artificial Intelligence	AI and Data Analytics for the Public Sector	Statistics and Its Application in Deep Learning
15:15 - 15:30	From Reports to Knowledge for Patient Safety Improvement through Advancements in Artificial Intelligence	AI and Data Analytics for the Public Sector Break	Statistics and Its Application in Deep Learning
15:15 - 15:30	From Reports to Knowledge for Patient Safety Improvement through Advancements in Artificial Intelligence	AI and Data Analytics for the Public Sector Break Event (Room A)	Statistics and Its Application in Deep Learning
<u>15:15 - 15:30</u> <u>15:30 - 16:15</u>	From Reports to Knowledge for Patient Safety Improvement through Advancements in Artificial Intelligence	AI and Data Analytics for the Public Sector Break Event (Room A) Keynote Speech #2	Statistics and Its Application in Deep Learning

Day 1: 12 Dec	2022 (Mon)
Time	Event
9:30 – 10:00	<ul> <li>Opening Ceremony</li> <li>Welcoming Speech by the President of EdUHK, Prof. Stephen Yan-Leung Cheung</li> <li>Welcoming Speech by Chairperson of IASC-ARS, Prof. Ray-Bing Chen</li> <li>Opening Speech by Conference General Chair, Prof. Philip Leung-Ho Yu</li> <li>Group Photo Taking</li> </ul>
10:00 - 10:45	Keynote Speech #1         Statistical Computing and Artificial Intelligence: A Smart Health Project as An Example         Prof. Chun-Houh Chen         Research Fellow and Director         Institute of Statistical Science         Academia Sinica
10.45 11.00	l aiwan
<u>10:45 – 11:00</u> 11:00 – 12:40	<ul> <li>Break</li> <li>Invited Session #5</li> <li>Some Tools in Analyzing High Dimensional Data</li> <li>Organiser: Erniel B. Barrios</li> <li>Chairperson: Erniel B. Barrios</li> <li>Evaluation of Clustering in High Dimensional Sparse Data Joseph Ryan G. Lansangan</li> <li>A Composite Index based on Reduced Rank Matrix Autoregressive Model Elaine Ling Xin, Xiaohang Wang</li> <li>A Moving-Window Bayesian Network Model for Assessing Systemic Risk in Financial Markets Shun Hin Chan, Amanda Man Ying Chu, Mike Ka Pui So</li> <li>Multiple Stratification Variables in Multipurpose Surveys with Principal Curves: Simulation Evaluations using Predicted Values Kier Jesse Ballar, Erniel B. Barrios</li> </ul>
11:00 - 12:40	<ul> <li>Invited Session #6 Recent Developments in Statistical Computing and Data Analysis Organiser: Ruby Chiu-Hsing Weng Chairperson: Ruby Chiu-Hsing Weng</li> <li>Categorical Exploratory Data Analysis in Major League Baseball Elizabeth P. Chou</li> <li>Spike-and-slab Priors for Differential Item Functioning Detection in a Multiple-group IRT Tree Model Yu-Wei Chang, Cheng-Xin Yang</li> </ul>

11:00 - 12:40	<ul> <li>Permutation Tests for Testing Variable Importance Po-Hsien Huang, Li-Ping Yen</li> <li>A Test-based Knot Selection Algorithm for Regression Splines and Some Extensions Tzee-Ming Huang</li> <li>Invited Session #16 Advances in Complex Time Series Organiser: Wai Keung Li Chairperson: Wai Keung Li</li> <li>Grouped Network Poisson Autoregressive Model</li> </ul>
	Yuxin Tao, Dong Li, Xiaoyue Niu
	• An efficient tensor regression for high-dimensional data Yuefeng Si, Yingying Zhang, Guodong Li
	• Asset pricing via the conditional quantile variational autoencoder Ke Zhu
	• Bootstrapping white noise checks for functional time series Yu Miao, Muyi Li
12:40 - 14:00	Lunch Break
14:00 - 15:40	Invited Session #12
	High-dimensional and Complex Statistical Models
	Chairperson: Jaevong Lee
	Path Algorithms for Fused Lasso Signal Approximator with Application to COVID-19 Spread in Korea     Donghyeon Yu, Johan Lim
	Asymptotic Properties for Bayesian Neural Network in Besov Space Kyeongwon Lee
	• Scalable and optimal Bayesian inference for sparse covariance matrices via screened beta-mixture prior Seongil Jo
	<ul> <li>Bayesian Estimation of High-dimensional Mixed DAG using Sparse Cholesky Factors Min Ho Cho, Kyoungjae Lee, Lizhen Lin</li> </ul>

14:00 - 15:40	Invited Session #13
	Recent Advance in Statistical Analysis that Affect Government and Health Policy
	Organiser: Thomas Fung
	Chairperson: Thomas Fung
	• The impact of the COVID-19, social distancing, and movement restrictions on
	crime in NSW, Australia
	Joanna J.J. Wang, Thomas Fung, Donald Weatherburn
	• Modelling COVID and arima in the US as hierarchical time series
	• Modening COVID and Crime in the OS as merarchical time series Thomas Fung Karlene Ormshy Joanna LI Wang
	Thomas I ding, Ratione Offisby, Joanna J.J. Wang
	• A New Network-Based Multimorbidity Index for Better Primary Care
	Assessment for Elders: The Australian Context
	Ruihua Guo, Boris Choy, Simon Poon
	• Bayesian analysis of multivariate returns and covariance time series
	Louis Zheng Lyu Huang
14:00 - 15:40	Invited Session #11
	Analyzing the Structure of Scientific Articles
	Organiser: Junji Nakano
	Chairperson: Junji Nakano
	• Article's scientific prestige: Measuring the impact of individual articles in the Web of Science
	Web 0J Science
	Thig Chen
	• A Study on How Scientific Collaboration Differs across Subjects via the
	Leading Author Models
	Frederick Kin Hing Phoa, Hohyun Jung, Ming-Yen Lai
	• Analysis of citations among U.S. patents using a stochastic generative model
	Yuichiro Yasui, Junji Nakano
1.7.40.46.00	
15:40 - 16:00	Break
10.00 - 17.40	Advances and Applications in Clustering
	Organiser: Mika Sato-Ilic, Vuichi Mori
	Chairperson: Mika Sato-Ilic, Yuichi Mori
	Champerson. Inika Sato Ine, Tulein Mon
	• Acceleration of Computation in Fuzzy Clustering
	Yuichi Mori, Tatsuki Akaki, Masahiro Kuroda
	• Fuzzy Clustering based Support Vector Machine for Autocoding and
	Interpretation of Results
	Yukako Toko, Mika Sato-Ilic
	• Deep Learning Method for Imbalanced Image Data Considering Reduction of
	Dimensionality by Multidimensional Scaling
	Shojiro Takamura, Mika Sato-Ilic

16:00 - 17:40	Invited Session #2	
	Econometric Analysis during Covid-19	
	Organiser: Ying Chen	
	Chairperson: Ying Chen	
	• Nonparametric comparison of epidemic time trends: the case of COVID-19 Marina Khismatullina, Michael Vogt	
	• Seeding Large-scale Public Health Inventions in Multilayer Social Networks with Heterogeneous Nodes Xiaoyi Han	
	• Policy Effectiveness on the Global Covid-19 Pandemic and Unemployment Outcomes: A Large Mixed Frequency Spatial Approach Yijiong Zhang, Xiaoyi Han, Yanli Zhu, and Ying Chen	
16:00 - 17:40	Invited Session #15	
	Recent Developments in Financial Time Series	
	Organiser: Ke Zhu	
	Chairperson: Ke Zhu	
	• High-dimensional Quantiled Conditional Moments with Hypergraph Zhoufan Zhu, Ningning Zhang, Ke Zhu	
	• Quantild conditional variance, skewness, and kurtosis by Cornish-Fisher expansion Ningning Zhang, Ke Zhu	
	• Inference for under-identified IV regression model Kunyang Song	
	• Forecasting High Dimensional Long Memory Time Series based on Memory augmented Gated Recurrent Unit	
	Maohin' r'ang, Muyi Li, Guodong Li	
17:40 - 18:40	IASC-ARS BoD Meeting	

Day 2: 13 De	ec 2022 (Tue)
Time	Event
10:00 - 11:15	Invited Session #1 New Development in Experimental Design Related Researches Organiser: Ray-Bing Chen Chairperson: Ray-Bing Chen
	Predictive Subdata Selection for Large-Scale Deterministic Computer Models     Ming-Chung Chang
	A Survey on Multi-step Lookahead Bayesian Optimization     Peng Liu
	Generalized Bayesian D-optimal supersaturated multistratum designs     Chang-Yun Lin
10:00 - 11:15	Invited Session #3 Modeling for complex and high-dimensional data Organiser: Qianqian Zhu Chairperson: Qianqian Zhu
	• Determination of the effective cointegration rank in high-dimensional time- series predictive regression Puyi Fang, Zhaoxing Gao, Ruey S. Tsay
	• <i>Quantile index regression</i> Yingying Zhang, Yuefeng Si, Guodong Li and Chil-Ling Tsai
	• Network Autoregression for Incomplete Matrix-Valued Time Series Xuening Zhu, Feifei Wang, Zeng Li
10:00 - 11:15	Contributed Session Chairperson: Alpha Man Ho Ling
	<ul> <li>A Semiparametric Approach to Empirical Bayes Estimation of Discrete False Discovery Rates Using Kernels Dominic B. Dayta, Sean Oliver M. Escalante</li> </ul>
	<ul> <li>Implementation of SVIR Mathematical Model in Simulating Covid-19 Infection Dynamics under Vaccination Intervention Eduardo C. Dulay Jr., Dr. Bernhard Egwolf., Adrian Roel P. Lapus, Ian D. Marco</li> </ul>
	• AI-based Scoring for Picture-cued Writing Assessment Yipeng Zhuang, Ruibin Zhao, Zhiwei Xie, Philip Leung Ho Yu

11:15 - 11:30	Break	
11:30 - 12:45	Invited Session #4	
	Modeling Strategies in Count Data	
	Organiser: Erniel B. Barrios	
	Chairperson: Erniel B. Barrios	
	Spatiotemporal Modeling of Sparse Geostatistical Epidemic Data Shirlee R. Ocampo, Erniel B. Barrios	
	• Incorporating Structural Change into Modeling of COVID-19 in the Philippines: A Spatiotemporal Model Regina M. Tresvalles, Erniel B. Barrios	
	Nonparametric Density-based Procedure of Detecting Emerging Events from Social Media Louise Adrian DC. Castillo, Erniel B. Barrios	
11.30 - 12.45	Invited Session #7	
11.50 12.15	Deep Learning and High-Dimensional Data Analysis	
	Organiser: Han-Ming Wu	
	Chairperson: Han-Ming Wu	
	• Combining measures of signal complexity and deep learning in medical images	
	for neurodegenerative disease screening	
	11-Ju Lee, Chuil-nouil Chell	
	• Variable selection and estimation for misclassified responses and high- dimensional error-prone predictors Li-Pang Chen	
	• Improve the Performance of Deep Learning Algorithms by Supervised Dimension Reduction Methods Han-Ming Wu	
11:30 - 12:45	Invited Session #8	
	Statistical computing for large-scale data	
	Organiser: Yingying Zhang	
	Chairperson: Yingying Zhang	
	• Fast and Robust Sparsity Learning over Networks: A Decentralized Median Regression Approach Xiaojun Mao	
	Robust Inference for Change Points in High Dimension Feiyu Jiang	
	• A Partially Functional Linear Modeling Framework for Integrating Genetic, Imaging, and Clinical Data Ting Li	

12:45 - 14:00	Lunch Break
14:00 - 15:15	Invited Session #10
	From Reports to Knowledge for Patient Safety Improvement through Advancements
	in Artificial Intelligence
	Organiser: Zoie SY Wong
	Chairperson: Zoie SY Wong
	• The Development of an Annotation Guidelines for Medication-related Incident Reports
	Zoie SY Wong, Ryohei Sasano, Shin Ushiro, Neil Waters
	• Active Learning Framework for Clinical Named Entity Recognition based on Transformers and Transfer Learning Jiaxing LIU, Zoie SY Wong
	• Development of Multitask Incident Reports-pretrained BERT Model to Empower Incident Reporting and Learning System Zoie SY Wong, Dentsu Data Artist Mongol Team
14.00 - 15.15	Invited Session #17
11.00 10.10	AI and Data Analytics for the Public Sector
	Organiser: Leo Yu
	Chairperson: Philip Leung-Ho Yu
	• Exploratory Research on Use of New Data for Computation of Private Housing
	Rent Index
	Chung, Kevin S.Y. Hsia
	Automatic Coding of Occupations in General Household Survey (GHS) of Hong Kong
	Ronald C.H. Chan, Chris C.W. Leung, Sharon P.W. Ng, Frances C.W. Wong, Matthew T.L. Wong
	• Anomaly Detection in Merchandise Trade Data: A Deep Learning Approach Benjamin C.H. Chan, Natalie K.P. Chung, Ian Y.C. Ng
14:00 - 15:15	Invited Session #14
	Statistics and its application in deep learning Organiser: Guodong Li, Feiqing Huang
	• HAR-It o models and high-dimensional HAR modeling forhigh-frequency data Huiling Yuan, Yifeng Guo, Kexin Lu, Guodong Li
	Cross-layer retrospective retrieving via layer attention     Yanwen Fang, Yuxi Cai, Guodong Li
	SARMA: A Computationally Scalable High-Dimensional Time Series Model Kexin Lu, Feiqing Huang, Yao Zheng, Guodong Li

15:15 - 15:30	Break
15:30 - 16:15	Keynote Speech #2
	Modelling Matrix Time Series via a Tensor CP-Decomposition
	Prof. Qiwei Yao
	Professor of Statistics
	Department of Statistics
	London School of Economics
	United Kingdom
16:15 - 16:45	Closing Ceremony
	Closing Remark by Conference General Chair, Prof. Philip Leung-Ho Yu
	Closing Speech by Chairperson of IASC-ARS, Prof. Ray-Bing Chen
	• Introduction to IASC-ARS 2023 by Conference Chair, Prof. Thomas Fung