The 6th International Conference on Smart Computing and Communication (SmartCom 2021)

December 29 - 31, 2021
New York, USA

Conference Program and Information Booklet

Organized By
SmartCom 2021 Committee

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Springer
Lecture Notes in Computer Science
Longxiang High Tech Group Inc.
North America Chinese Talents Association
### Smartcom 2021 Program at a Glance

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**Registration:**

Online Registration System
(http://www.cloud-conf.net/smartcom/2021/registration.html)

**Presentation Online Rooms:**

Zoom (https://zoom.us/)

**Virtual Conference Link:**
TBD

**Important Notice:**

Due to the outbreak of COVID-19, this year the SmartCom 2021 will be a virtual conference online.

For all participants, please do notice all the time mentioned in this booklet is based on the time zone of east USA which is **Eastern Daylight Time (EDT), UTC -4**. Please be careful on the conference time.
Bio: The booming growth and rapid development in embedded systems, wireless communications, sensing techniques and emerging support for cloud computing and social networks have enabled researchers and practitioners to create a wide variety of Cyber-Physical-Social Systems (CPSS) that reason intelligently, act autonomously, and respond to the users’ needs in a context and situation-aware manner. The CPSS are the integration of computation, communication and control with the physical world, human knowledge and sociocultural elements. It is a novel emerging computing paradigm and has attracted wide concerns from both industry and academia in recent years. Currently, CPSS are still in their infancy stage. Our first ongoing research is to study effective and efficient approaches for CPSS modeling and general system design automation methods, as well as methods analyzing and/or improving their power and energy, security, trust and reliability features. Once the CPSS have been designed, they collect massive data (Volume) from the physical world by various physical perception devices (Variety) in structured/semi-structured/unstructured format and respond the users’ requirements immediately (Velocity) and provide the proactive services (Veracity) for them in physical space or social space. These collected big data are normally high dimensional, redundant and noisy, and many beyond the processing capacity of the computer systems. Our second ongoing research is focused on the Big Data-as-a-Service framework, which includes data representation, dimensionality reduction, incremental and distributed processing, security and privacy, deep learning, clustering, prediction and proactive services, aiming at representing and processing big data generated from CPSS, providing more valued smart services for human and refining the previously designed CPSS. This talk will present our latest research on these two directions. Corresponding case studies in some applications such as smart traffics will be shown to demonstrate the feasibility and flexibility of the proposed system design methodology and analytic framework.

Abstract: Laurence T. Yang got his BE in Computer Science and Technology and BSc in Applied Physics both from Tsinghua University, China and Ph.D in Computer Science from University of Victoria, Canada. He is a professor and W.F. James Research Chair at St. Francis Xavier University, Canada. His research includes parallel, distributed and cloud computing, embedded and ubiquitous/pervasive computing, and big data. He has published 200+ papers in the above areas on top IEEE/ACM Transactions/Journals including 6 and 25 papers as top 0.1% and top 1% highly-cited ESI papers, respectively. He has been involved actively act as a steering chair for 10+ IEEE international conferences. He is the chair of IEEE CS Technical Committee of Scalable Computing (2008-2011, 2018-), the co-chair of IEEE SMC Technical Committee on Cybermatics (2016-) and the vice-chair of IEEE CIS Technical Committee on Smart World (2016-2019). In addition, he is serving as an editor for many international journals and is an author/co-author or an editor/co-editor of more than 25 books from well-known publishers, invited to give around 50 keynote talks at various international conferences and symposia. His recent honours and awards include IEEE Canada C. C. Gotlieb Computer Medal (2020), Fellow of Institute of Electrical and Electronics Engineers (2020), IEEE TCCPS Most Influential Paper Award on Cyber-Physical Systems (2020), IEEE SCSTC Most Influential Paper Award on Smart Computing (2019), IEEE TCBD Best Journal Paper Award on Big Data (2019), Clarivate Analytics (Web of Science Group) Highly Cited Researcher (2019), Fellow of Engineering Institute of Canada (2019), AMiner Most Influential Scholar Award for Internet of Things (2018), IEEE TCPCS Distinguished Leadership Award on Cyber-Physical Systems (2018), IEEE SCSTC Life-Career Achievement Award on Smart Computing (2018), Fellow of Canadian Academy of Engineering (2017), IEEE System Journal Best Paper Award (2017), IEEE TCSCD Award for Excellence in Scalable Computing (2017), Elsevier JCSS Journal Most Cited Paper Award (2017) and the PROSE Award on Engineering and Technology (2010).
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A Novel Client Sampling Scheme for Unbalanced Data Distribution under Federated Learning
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Joint Accuracy and Resource Allocation for Green Federated Learning Networks
Xu Chu, Xiaoyang Liu, Qimei Chen, Yunfei Xiong, Juanjuan Wang, Han Yu and Xiang Hu

Achieving Threshold Traceability in Anonymous Consortium Blockchain
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Design and Development of Simulation Software based on AR-based Torricelli Experiment
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Chinese Fine-Grained Sentiment Classification Based on Pre-Trained Language Model and Attention Mechanism
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Parallel improved quantum evolutionary algorithm for complex optimization problems
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Resource Modeling of Power Communication Packet Optical Transport Network
Zhixin Lu, Lianyu Fu, Yizhao Liu and Xiyang Yin

Charge prediction for Criminal Law with semantic attributes
A Survey of Machine Learning and Deep Learning Based DGA Detection Techniques
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An SG-CIM Model Table Classification Method Based on Multi Feature Semantic Recognition Technology
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Federated Learning and MADDPG based on Computational Offloading and Resource Allocation in MEC
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Thunderstorm Recognition Based on Neural Network PRD$\text{D}$NET Model
Shengchun Wang, Danyi Hu, Changqing Zhou and Jingyu Xu

Secure Shell Remote Access for Virtualized Computing Environment
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A novel deception defense-based honeypot system for power grid network
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BBCT: A Smart Blockchain-based Bulk Commodity Trade System
Jian Yang, Yawen Lu, Zhihui Lu, Jie Wu, and Hui Zhao

Research on Graph Structure Data Adversarial Examples Based on Graph Theory Metrics
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Analysis and Discussion on Standard Cost Allocation Model in State Grid
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