The 18th IEEE International Symposium on Parallel and Distributed Processing with Applications (ISPA-2020)

The 10th IEEE International Conference on Big Data and Cloud Computing (BDCloud-2020)

The 13th IEEE International Symposium on Social Computing and Networking (SocialCom-2020)

The 10th IEEE International Conference on Sustainable Computing and Communications (SustainCom-2020)

The 19th International Conference on Ubiquitous Computing and Communications (IUCC-2020)

Online Conference, 17-19 December 2020 (Greenwich Mean Time Zone)

Conference Program and Information Booklet

Sponsored by

Advanced Program Summary (Greenwich Mean Time Zone)

17 December 2020 (Thursday)

Room	Room-2	Room-3	Room-4
8:30-9:00	Opening Ceremony (Room-1)		
9:00-9:45	Keynote Speech 1 (Room-1)		
9:45-10:30	Keynote Speech 2 (Room-1)		
10:30-10:40	Break		
Room	Room-2	Room-3	Room-4
10:40-12:40	ISPA-1	ISPA-2	IUCC-1
12:40-13:30	Lunch Break		
13:30-16:00	ISPA-3	ISPA-4	IUCC-2
16:00-16:10	Break		
16:10-18:40	ISPA-5	ISPA-6	IUCC-3

18 December 2020 (Friday)

Room	Room-2	Room-3	Room-4
8:30-9:15	Keynote Speech 3 (Room-1)		
9:15-10:00	Keynote Speech 4 (Room-1)		
10:00-10:10	Break		
Room	Room-2	Room-3	Room-4
10:10-12:40	ISPA-7	BDCloud	MLFuNet
12:40-13:30	Lunch		
13:30-15:00	Panel (Room-1)		
15:00-15:10	Break		
15:10-17:00	ISPA-8	SocialCom-1	IUCC-4
17:00-17:10	Break		
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19 December 2020 (Saturday)

Room	Room-2	Room-3	Room-4
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10:30-10:40	Break		
10:40-12:40	ISPA-11	SustainCom	IUCC-7
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13:30-15:00	ISPA-12	NGDN	AISys-01
15:00-15:10	Break		
15:10-17:00	ISPA-13	IoTBDH	AISys-02
17:00-17:10	Break		
17:10-19:00	ISPA-14	SMMA	DSONAM

Presentation Guidelines

Conference Date
The conference is to be held from Dec 17-19, 2020. The time for conference program is based on **GMT, Greenwich Mean Time**.

For Session Chairs
Session Chairs are requested to join the zoom at least 10 minutes before their session.

For Authors
You are strongly encouraged to join the zoom during your presentation and Q&A. Please confirm your attendance with the Session Chair at least 10 minutes before the session.

Timing
Please ensure your check the program for the exact time of your session and where your paper falls within the session.
It is recommended that all IEEE ISPA/BDCloud/SocialCom/SustainCom/IUCC-2020 paper presentations use **20 minutes presentation time plus 5 minutes question time**. However, the Session Chairs will determine the exact presentation time for each paper, based on the number of presentations in each session. The Session Chairs will ensure that you do not over-run the time allocated.

Online Conference Venue

The congress will be held online via four zooms, which can be accessed via the following links:

Room 1: Meeting ID: 913 0668 4125
     Invitation Link: https://zoom.us/j/91306684125?pwd=S0VrOUdSNG9YcEcwK280SW1qS0NEZz09
Room 2: Meeting ID: 993 1490 0725
     Invitation Link: https://zoom.us/j/99314900725?pwd=ZzBHeVhpaEJUSlhkQktGcUZ0cE54dz09
Room 3: Meeting ID: 926 0383 0692
     Invitation Link: https://zoom.us/j/92603830692?pwd=VkhaT3lFYW5LZmFYdTlEbmg3d3FjUT09
Room 4: Meeting ID: 963 2739 5457
     Invitation Link: https://zoom.us/j/96327395457?pwd=bENpSGZuTzFJdGZ2WWxlcHV3NktHUT09

It is recommended to join your interested room via the web-based zoom (see the instruction below), especially for those who don't have a zoom account or cannot use the zoom app for free.

After typing a link into your browser, click "Join from Your Browser" on your webpage and you will be joining the conference for free. In the event that the meeting passcode is required, please type **202012** for all above rooms.

During each presentation, you can type your question(s) in the zoom. After the presentation, the session chair will ask the questions on behalf of you.

Beyond the online congress, you can replay any presentation by clicking the link in the program, which will lead you into the slack for replaying your selected representations. To do this, **please join the following two slack workspaces**:

https://join.slack.com/t/exeterconference20201/shared_invite/zt-k0zyu1jn-ErApH6MwgMJ41XD_4QlemQ
https://join.slack.com/t/ispa-2020/shared_invite/zt-jx1s2z9e-wBQYpZ_i7UUTEHXe7mA6qg

Just notice that please don't upload any files into slack, which will squeeze out the presentations. For any assistance, please contact conference.register2020@gmail.com.

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Session Chair: Pablo Casaseca, University of Valladolid, Spain

Keynote Speech 1

Aeronautical Ad-Hoc Networking for the Internet-above-the-clouds

Prof. Lajos Hanzo

University of Southampton, UK

Abstract

As a promising system-architecture, an integrated terrestrial, UAV-aided, airplane-assisted as well as satellite-based global coverage-solution and its enabling techniques will be highlighted as a further step towards the provision of seamless global coverage.

An open scientific challenge is that of striking the most appropriate trade-off amongst the conflicting performance metrics of throughput, transmit power, latency, error probability - just to name a few. The 5G system meets this challenge by introducing three modes of operations, namely the enhanced Mobile BroadBand (aMBB), the Ultra Reliable Low-Latency Communications (URLLC) and the massive Machine Type Communications (mMTC) modes.

However, further research is required for findig all the optimal operating points of wireless systems with the aid of sophisticated multi-component system optimization, leading to the Pareto-front of all optimal solutions.
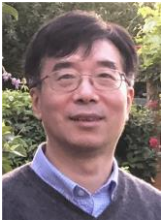
Biography

Lajos Hanzo is a Fellow of the Royal Academy of Engineering (FREng), FIEEE, FIET and a EURASIP Fellow, Foreign Member of the Hungarian Academy of Science. He holds honorary Doctorates from the University of Edinburgh and the Technical University of Budapest. He co-authored 19 IEEE Press - JohnWiley books and 1900+ research contributions at IEEE Xplore. For further information on his research in progress and associated publications please refer to IEEE Xplore.

Session Chair: Jianxin Li, Deakin University, Australia

Keynote Speech 2

Bad Data Analysis in An Era of Big Data

Prof. Zidong Wang

Brunel University London, UK

Abstract

In this talk, we discuss another side of big data analysis, bad data analysis, where the badness means the complexities resulting in the reproducibility issues. Some background knowledge is first introduced on the volatility of the big data analysis, which shows 1) "big" does not necessarily mean "better" and 2) the so-called multi-objective data analysis (against badness) is vitally important in advancing the state-of-the-art. Two examples are used for demonstration of the big data analysis, one for big data from complex networks and the other for big data from gene expression image processing. Finally, conclusions are drawn and some future directions are pointed out.

Biography

Dr. Zidong Wang is currently Professor of Dynamical Systems and Computing in the Department of Computer Science, Brunel University London, U.K. From 1990 to 2002, he held teaching and research appointments in universities in China, Germany and the UK. Prof. Wang's research interests include dynamical systems, signal processing, bioinformatics, control theory and applications. He has published 250+ papers in IEEE Transactions and 60+ papers in Automatica with an H-index of 120. He is a holder of the Alexander von Humboldt Research Fellowship of Germany, the JSPS Research Fellowship of Japan, William Mong Visiting Research Fellowship of Hong Kong.

Prof. Wang serves (or has served) as the Editor-in-Chief for Neurocomputing, the Deputy Editor-in-Chief for International Journal of Systems Science, and an Associate Editor for 12 international journals including IEEE Transactions on Automatic Control, IEEE Transactions on Control Systems Technology, IEEE Transactions on Neural Networks, IEEE Transactions on Signal Processing, and IEEE Transactions on Systems, Man, and Cybernetics-Part C. He is a Member of the Academia Europaea, a Fellow of the IEEE, a Fellow of the Royal Statistical Society and a member of program committee for many international conferences.

Session Chair: Fei Hao, Shaanxi Normal University, China

Keynote Speech 3

Federated Learning Systems: A New Holy Grail for System Research in Data Privacy and Protection?

Prof. Bingsheng He

National University of Singapore, Singapore

Abstract

Federated learning has been a hot research area in enabling the collaborative training of machine learning models among different organizations under the privacy restrictions. As researchers try to support more machine learning models with different privacy-preserving approaches, there is a requirement in developing systems and infrastructures to ease the development of various federated learning algorithms. Just like deep learning systems such as Caffe, PyTorch, and Tensorflow that boost the development of deep learning algorithms, federated learning systems are equivalently important, and face challenges from various issues such as unpractical system assumptions, scalability and efficiency. Inspired by federated systems in other fields such as databases and cloud computing, we study the system design requirements for federated learning systems. We find that two important features for federated systems in other fields, i.e., heterogeneity and autonomy, are rarely considered in the existing federated learning systems. In this talk, we will take a systematic comparison among the existing federated learning systems and present our research progress and future system research opportunities and directions.

More details about our research can be found at http://www.comp.nus.edu.sg/~hebs/ and related survey (https://arxiv.org/abs/1907.09693).

Biography

Dr. Bingsheng He is currently an Associate Professor and Vice-Dean (Research) at School of Computing, National University of Singapore. Before that, he was a faculty member in Nanyang Technological University, Singapore (2010-2016), and held a research position in the System Research group of Microsoft Research Asia (2008-2010), where his major research was building high performance cloud computing systems for Microsoft. He got the Bachelor degree in Shanghai Jiao Tong University (1999-2003), and the Ph.D. degree in Hong Kong University of Science & Technology (2003-2008). His current research interests include cloud computing, database systems and high performance computing. His papers are published in prestigious international journals (such as ACM TODS and IEEE TKDE/TPDS/TC) and proceedings (such as ACM SIGMOD, VLDB/PVLDB, ACM/IEEE SuperComputing, ACM HPDC, and ACM SoCC). He has been awarded with the IBM Ph.D. fellowship (2007-2008) and with NVIDIA Academic Partnership (2010-2011). Since 2010, he has (co-)chaired a number of international conferences and workshops, including IEEE CloudCom 2014/2015, BigData Congress 2018 and ICDCS 2020. He has served in editor board of international journals, including IEEE Transactions on Cloud Computing (IEEE TCC), IEEE Transactions on Parallel and Distributed Systems (IEEE TPDS), IEEE Transactions on Knowledge and Data Engineering (TKDE), Springer Journal of Distributed and Parallel Databases (DAPD) and ACM Computing Surveys (CSUR). He has got editorial excellence awards for his service in IEEE TCC and IEEE TPDS in 2019.

Session Chair: Jia Hu, University of Exeter, UK

Keynote Speech 4

New Generation of Internet of Things Architecture, Services and Ecosystems

Nektarios Georgalas

British Telecom, UK

Abstract

The Internet of Things (IoT) aims at connecting myriads of data collecting devices deployed at physical locations in the field. Traditionally, a custom set of such devices would collect data sets specifically targeted to one type of application usually hosted in the cloud; another application would require another set of sensors and so on, thus leading to stove-piped solutions and introducing major management complexity. The Data Exchange paradigm aims at a horizontal approach, where sensors collect data which becomes a reusable resource among a plurality of applications removing the dedicated sensor-data-app vertical model. Moreover, modern data processing techniques including AI, machine learning and a variety of different analytics, such as video analytics, drives the development of innovative IoT applications and services which, due to Data Exchange, may combine, correlate and analyse data from more than one source driving higher value insights from low-level data. Another noteworthy dimension is introduced by the "IoT Continuum". IoT Continuum characterises the spread of hosting compute infrastructures from the very customer edge, where devices are situated such as general-purpose gateways, the network edge, e.g., 5G MEC nodes, all the way to the cloud, and anywhere in between the edge and cloud ends where compute nodes are available. These new techniques driving IoT service development as well as the IoT Continuum define the New Generation of IoT Architecture (NG-IoTA), on which this talk will be focusing. We will present a set of architectural principles underpinning NG-IoTA, talk about the manifestation of these principles in various solutions regarding Edge Computing, orchestration, IoT analytics, service management and their application in a few use-cases offering real world example implementations of these capabilities.

Biography

Nektarios Georgalas is a Principal Researcher at British Telecom's Research and Innovation department. In his current role, he is Director of the BT/Intel and the BT/Huawei Co-labs, two collaborative research programmes with key BT partners delivering innovations in the areas of Cloud, Data Centres, Network Virtualisation, Smart Cities, IoT and Mobility. During his career with BT, since 1998, he has managed numerous collaborative and internal research projects in areas such as network management, market-driven data management systems, policy-based management, distributed information systems, SOA/Web Services, Model Driven Design and Development of telecoms OSS, Cloud and NfV. Nektarios has led numerous international collaborations on the application of advanced techniques for design, development and operation of telecoms Networks and Operation Support Systems environments. In the past he was very active leading and contributing to key programmes within the TeleManagement Forum, where he established international standards teams, led Catalysts and influenced the Forum's strategy towards a model-driven and software-defined ecosystem of digital services in dynamic marketplaces; most recently he is involved in TMF's Smart City Forum and related Catalysts. His work has been recognised several times by numerous international awards including the TMForum's "Excellence Award for Innovation" 2010, "Most Innovative Catalyst Award" 2014, "Best New Catalyst Award" 2015 and "Most Significant Contribution to Frameworx Award" 2015, "Most Innovative Catalyst – Smart X Commercial" 2016, "Outstanding Performance in the Catalyst Programme" 2017 and "Smart City Innovator of the Year" Excellence Award 2017. Other recognition accolades include Global Telecoms Business's "Business Service Innovation Award" 2010, 2012 and 2013. He has been Finalist in UK IT Industry Award for "Best IT Innovation" in 2013 and Highly Commended for the IET Innovation Award for Telecommunication in 2009. He has also achieved "Best innovation for Large Enterprise" and "Best Customer Experience Innovation" Finalists in BT Innovation Awards 2010. Nektarios has been recognised in BT's TSO "Brilliant People" 2015. Nektarios is inventor and co-inventor of 12 patents. He has also authored more than 70 papers in international journals and conferences and served as guest editor in the areas of IoT, Big Data and Data Science in highly recognised international journals including IEEE. He has served as General Co-chair, Programme Co-Chair, Programme Committee and Keynote Speaker and Invited Panellist in top international IEEE academic and TMForum conferences.

Session Chair: Jia Hu, University of Exeter, UK

2020 IEEE ISPA/BDCloud/SocialCom/SustainCom/IUCC Joint Plenary Panel Session

Artificial Intelligence of Things (AIoT) and Smart Edge Computing

Abstract

The convergence of Internet-of-Things and Artificial Intelligence leads to a brand-new technology landscape, Artificial Intelligence of Things (AIoT), which is set to make significant impacts to the sectors of smart home, smart city, and smart industry. Meanwhile, the advent of intelligent edge computing enables real-time insights by big data processing at the network edge, close to various IoT devices. Intelligent edge computing is envisaged to transform the AIoT applications and push the boundaries of data processing and machine learning. Hence, how to achieve Artificial Intelligence of Things (AIoT) and Smart Edge Computing systems becomes a major objective for researchers and practitioners.

The panelists in this panel have diverse backgrounds with outstanding research accomplishments are invited to present their opinions on the challenges and strategies to achieve the objective of having AIoT and Smart Edge Computing systems. The session will then be open for discussions from the floor.

Panelist: Prof. Ashiq Anjum, University of Leicester, UK

Prof. Liangxiu Han, Manchester Metropolitan University, UK

Prof. Lu Liu, University of Leicester, UK

Prof. Omer Rana, Cardiff University, UK

Prof. Rajiv Ranjan, Newcastle University, UK

Dr. Shiqiang Wang, IBM Thomas J. Watson Research Center, USA

Part I: TECHNICAL SESSIONS OF ISPA-2020 and Associated Workshops/Symposia

ISPA-2020 TECHNICAL SESSIONS
17 December 2020 Thursday

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Session Chair: Xu Zhang, Nanjing University, China

Reinforced Keyphrase Generation with BERT-based Sentence Scorer
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SOG-Based Multi-Core LTL Model Checking
Chiheb Ameur Abid, Kais Klai, Jaime Arias, Hiba Ouni

A Task Execution Framework Based on Aging Indicator and SARIMI
Minghao Tang, Peng Zhang, Haoqi Sun, Lei Zhang

Framework-Agnostic Optimization of Repeated Skewed Joins at Massive Scale
Andrea Nardelli, Vladimir Vlassov, Amir H. Payberah

Parallel Computing and Optimization of Lattice Boltzmann Method Based on SW26010 Processor
Xiaoxiao Zhang, Liangjun Wang, Xuesen Chu, Hu Ding, Wu Zhang

A tile assembly model to calculate point-multiplication on conic curves over finite field GF(2^n)
Yongnan Li

10:40-12:40   Session ISPA-2: Recommendation, Planning, and Prediction (Room-3)

Session Chair: Feng Wei, York University, Canada

A recommendation algorithm for sparse data via implicit relationship
Miao Xie, Shijun Liu, Li Pan

A Hybrid Recommendation Algorithm with Short-term Preference and Knowledge Preference
Jia-le Li, Zhi-juan Du, Jian-tao Zhou

A Web API Recommendation Method with Composition Relationship Based on GCN
Yangqi Zhang, Haiyang Yang, Li Kuang

A UAV Path and Action Planning Algorithm for Indoor Localization Information Collection
Zijie Wang, Liang Liu, Jiankang Xu, Li Zeng

Efficient Multi-Request Route Planning on Road Network
Jiajia Li, Jiahui Hu, Lei Li, Xing Xiong, Xiufeng Xia

An efficient dynamic neural network for predicting time series data stream
Liang Chen, Wei Wang, Yun Yang

Predicting Residual Stress by Finding Peak Shape Using Artificial Neural Networks
Liu Yang, Junyu Zhang, Tingxuan Chen, Wuji Lei, Xiaolong Liu

13:30-16:00   Session ISPA-3: Parallel Computing and Data Storage (II) (Room-2)

Session Chair: Stijn Schildermans, KU Leuven, Belgium

Evaluating DAG Scheduling Algorithms for Maximum Parallelism
Wei Zheng, Zhaobin Chen, Rizos Sakellariou, Lu Tang, Jinjun Chen

Discrete Sine and Cosine Transform and Helmholtz Equation Solver on GPU
Mingming Ren, Yuyang Gao, Gang Wang, Xiaoguang Liu

CuCodeML: GPU-Accelerated CodeML for the Branch-Site Model in Phylogenetics

Mingming Ren, Xiaomin Huang, Zhuofeng Wu, Rebecca J. Stones, Xiaoguang Liu, Gang Wang

ptlbmalloc2: Reducing TLB Shootdowns with High Memory Efficiency
Stijn Schildermans, Jianchen Shan, Xiaoning Ding

Dependent and Heterogeneous Process Migration Based on Checkpoints
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A Unified Page Walk Buffer and Page Walk Cache
Dunbo Zhang, Chaoyang Jia, Qiong Wang, Li Shen

Live Container Migration via Pre-restore and Random Access Memory
Zhixing Yu, Kejing He, Chao Chen, Jian Wang

13:30-16:00   Session ISPA-4: Scheduling and Load Balancing (Room-3)

Session Chair: Hong Zhu, Oxford Brookes University, UK

Task Merging Based on Scenarios of Functionally Unique Resources for Deadline-Constrained Workflow Scheduling
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APCC: Agile and Precise Congestion Control in Datacenters
Renjie Zhou, Guoyuan Yuan, Dezun Dong, Shan Huang

NVMCache: Wear-Aware Load Balancing NVM-based Caching for Large-Scale Storage Systems
Zhenhua Cai, Jiayun Lin, Fang Liu, Zhiguang Chen, Hongtao Li

Resource Scheduling Algorithm on Mobile P2P Distribution Networks
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A Novel Influence Maximization-based Dynamic Forwarding Node Selection Scheme in SDVNs
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Performance Modeling of a General GPS Scheduling Under Long Range Dependent Traffic
Ran Zhang, Lei Liu, Xudong Lu, Zhongmin Yan, Hui Li

Game-Based Negotiation between Power Demand and Supply in Green Datacenters
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Session Chair: Kostas Kolomvatsos, University of Thessaly, Greece

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Parallel Variational Autoencoders for Multiple Responses Generation
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Characterizing the I/O Pipeline in the Deployment of CNNs on Commercial Accelerators
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DCDFNE: build dataset to evaluate binary codes diffing tools and train deep learning models
Ke Zhan, ZhongHua Lu, BingChang Liu

APENAS: An Asynchronous Parallel Evolution Based Multi-Objective Neural Architecture Search
Mengtao Hu, Li Liu, Wei Wang, Yao Liu

FPGA Implementation of MobileNetV2 CNN Model Using Semi-Streaming Architecture for Low Power Inference Applications
Nazariy K. Shaydyuk, Eugene B. John

16:10-18:40   Session ISPA-6: Learning Systems and Applications (Room-3)

Session Chair: Xu Zhang, Nanjing University, China

Improved Human Activity Recognition Model based on Sequence Mixup
Ran Tan, Xuefeng Yan

An Ego Network Embedding Model via Neighbors Sampling and Self-attention Mechanism
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User Preference Excitation Network for Sequential Recommendation
Jiong Wang, Yingshuai Kou, Neng Gao, Chenyang Tu

Remote Procedure Call Optimization of Big Data Systems Based on Data Awareness
Jin Wang, Yaqiong Yang, Jingyu Zhang, Lei Wang

Feature Envy Detection based on Bi-LSTM with Self-Attention Mechanism
Hongze Wang, Jing Liu, JieXiang Kang, Wei Yin, Haiying Sun, Hui Wang

Global Context-aware Representation for Implicit Discourse Relation Recognition
Meilin Zhou, Qi Liang, Peng Zhang, Lu Ma, Dan Luo, Bin Wang

Honeyeye: A Network Traffic Collection Framework for Distributed ICS Honeynets
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18 December 2020 Friday

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Session Chair: Zhengxin Yu, University of Exeter, UK

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NarGNN: Narrative Graph Neural Networks for New Script Event Prediction Problem
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Social Recommendation based on Graph Neural Networks
Hongji Sun, Lili Lin, Riqing Chen

Effectively Refining Parameters for Unexpected Nodes on Structural Graph Clustering
Chuanyu Zong, Chengwei Zhang, Xiufeng Xia, Tao Qiu, Jiaying Wang

Effectively Explaining Missing Nodes on Structural Graph Clustering
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A Span-based Model for Joint Entity and Relation Extraction with Relational Graph
Xingang Wang, Dong Wang, Fengpo Ji

Answer Graph-based Interactive Attention Network for Question Answering over Knowledge Base
Lu Ma, Peng Zhang, Dan Luo, Meilin Zhou, Qi Liang, Bin Wang

Effectively Incremental Structural Graph Clustering for Dynamic Parameter
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Session Chair: Wang Miao, University of Exeter, UK

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Yiping Teng, Dan Liu, Xiaoting Liu, Weiyu Zhao, Haigang Liu, Chunlong Fan

Scaleplus: Towards Fast Scaling of Distributed Streaming Dataflows
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17:10-19:00 Session ISPA-9: Blockchain and Data Sharing (Room-2)

Session Chair: Wang Miao, University of Exeter, UK

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Blockchain-based Access Control Mechanism of Federated Data Sharing System
Yan Ding, Liaoliao Feng, Ying Qin, Pan Dong, Chenglin Huang, Long Gao, Yusong Tan

Multi-layer Access Control Mechanism based on Blockchain for Mobile Edge Computing
YiChen Hou, WenXin Liu, Hui Lin, XiaoDing Wang

A cross-blockchain based distributed crowdsouring system for Internet of Things
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An Systematic Study on Blockchain Transaction Databases Storage and Optimization
Jingyu Zhang, Siqi Zhong, Jin Wang, Lei Wang

Revisiting the Fairness and Randomness of Delegated Proof of Stake Consensus Algorithm
Qi Wang, Ming Xu, Xiangxue Li, Haifeng Qian

19 December 2020 Saturday

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Session Chair: Karri Chiranjeevi, University of Beira Interior, Covilhã, Portugal

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Hui Qi, Tianwei Lu, Ligang Cong, Xiaoqiang Di

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Session Chair: Aneta Poniszewska-Maranda, Lodz University of Technology, Poland

Atomic Restriction: Hardware Atomization to Defend Against Preemption Attacks
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Analysis of security methods in Vehicular Ad-Hoc Network against Worm Hole and Gray Hole attacks
Krzysztof Stepien, Aneta Poniszewska-Maranda

Hardware Implementation of Security Association Lookup Device Based on RAM
Dongfang Li, Yasha Chen, Shuai Zhang, Wei Shen, Guang Yang

Low-rate DoS Attack Detection Based on WPD-EE Algorithm
Xiaocai Wang, Qiuwei Yang, Zichao Xie, Zhiqing Zheng, Yudong Yan, Dan Tang

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IntruDTS: Interactive Visual Analysis System for Intrusion Detection in Time Series
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Session Chair: Karri Chiranjeevi, University of Beira Interior, Covilhã, Portugal

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Wei Song, Song Liu, Xiaochun Wang, Weiguo Wu

Highly Efficient and GPU-Friendly Implementation of BFS on Single-node System
Rongyu Dong, Huawei Cao, Xiaochun Ye, Yuan Zhang, Qinfen Hao, Dongrui Fan

DE-CO: A Two-Step Spelling Correction Model for Combating Adversarial Typos
Zhengxiao Liu, Fali Wang, Zheng Lin, Lei Wang, Zhiyi Yin

Joint extraction of triple knowledge based on relation priority
Chuanzhi Zhuang, Ningyu Zhang, Xiaoling Jin, Zhong Li, Shumin Deng, Huajun Chen

A simple function embedding approach for binary similarity detection
Weilong Li, Shuyuan Jin

15:10-17:00   Session ISPA-13: Crowd Science and System Demo (Room-2)

Session Chair: Kostas Kolomvatsos, University of Thessaly, Greece

Multi-interest Aware Recommendation in Crowdintell Network
Yixin Zhang, Wei He, Lizhen Cui, Lei Liu, Zhongmin Yan

Encrypted Network Traffic Classification: A data driven approach
Zhongkai Zhang, Lei Liu, Xudong Lu, Zhongmin Yan, Hui Li

Task Assignment with Consensus Decision for Spatial Crowdsouring
Xiaomeng Lian, Wei He, Lizhen Cui, Hui Li, Lei Liu

Crowd Intelligence Empowered Video Transmission in Ultra-low-bandwidth Constrained Circumstances
Hexiang Qiao, Zheming Yang, Bing Liang, Wen Ji

Understanding Crowd Intelligence in Large-scale Systems: A Hierarchical Binary Particle Swarm Optimization Approach
Linqing Zhai, Zheming Yang, Wen Ji

17:10-19:00   Session ISPA-14: Multi-Access Edge Computing and Edge Networks (Room-2)

Session Chair: Kostas Kolomvatsos, University of Thessaly, Greece

Caching Resource Allocation and Mobility Aware in Information-Centric Networking with Mobile Edge Computing
Daud Khan, Haopeng Chen, Najamul Din

Towards 6G Joint HAPS-MEC-Cloud 3C Resource Allocation for Delay-Aware Computation Offloading
Yang Yang, Xiaolin Chang, Ziye Jia, Zhu Han, Zhen Han

PCRec: A Private Coding Computation Scheme Based on Edge Computing for Recommendation System
Mengjia Zhai, Fei Gu, Jin Wang, Lingzhi Li, Kejie Lu, Jianping Wang

MCSEC: Secure Coded Matrix Multiplication Scheme for Edge Computing with Minimum Communication Cost
Tingting Dong, Jin Wang, Fei Gu, Jingya Zhou, Kejie Lu, Jianping Wang

A Deep Reinforcement Learning based Mobile Device Task Offloading Algorithm in MEC

Yang Li, Bing Shi

[SDWCM: A Software-Defined Wi-Fi Architecture for Collaborative Management](#)
Meimei Zhang, Yingying Xie, Xiang Chen, Bo Bai, Gong Zhang, Kai Lei

[Optimizing 3-D Placement of Multiple UAVs Based on Taguchi's Method](#)
Ziwen Ma, Wei Huangfu, Yaxi Liu

MLFuNet-2020 TECHNICAL SESSIONS
18 December 2020 Friday

10:10-12:40 Session MLFuNet: Machine Learning Empowered Future Network (Room-4)

Session Chair: Lexi Xu, ChinaUnicom, China
Invited talk: Machine Learning for Communication and Network Data Processing
Chunbo Luo, University of Exeter, UK

[Price Learning in Joint Resource Allocation and Power Control Game in Heterogeneous Cellular Networks](#)
Chen Sun, Bo Zhang, Wei Zheng, Jian Shu

[Capacity Enhancement in LTE Network based on Machine Learning](#)
Jinge Guo, Zhongsheng Fan, Yang Zhang, Huangtao Song, Bao Guo

[Dynamic Beam Hopping of Multi-beam Satellite Based on Genetic Algorithm](#)
Libing Wang, Xin Hu, Shijun Ma, Sujie Xu, Weidong Wang

[An Improved Energy Saving Strategy for SDN-based Data Center](#)
Peng HongYu, Xiao HanLiang, Hao TianLu, Wang Kan, Chen ZhenKai, Xu LeXi

[An Energy Efficiency Strategy Based on Bayesian Classification in SDN DataCenter](#)
Xiao HanLiang, Peng HongYu, Gong Sha

[An improved firework algorithm based on local search optimization](#)
Gong Sha, Peng HongYu, Dai Qi, Xiao HanLiang

[Recognition and Optimization of Atmospheric Duct in TD-LTE System Based on Convolutional Neural Network](#)
Jin-Hu Shen, Ji-Xiang Liu, Jing-Lei Zuo, Wen-Bo Ding, Ao Shen, Yuan Fang, Yang Zhang, Xi-Dian Wang, Feng Luo

[Design of Performance Benchmark for Time Series Databases](#)
Miaoqiong Wang, Siyuan Liu, Kai Wei, Han Liu, Chunyu Jiang, Shu Yan, Pengwei Ma

NGDN-2020 TECHNICAL SESSIONS
19 December 2020 Saturday

13:30-15:00 Session NGDN: Next Generation Data-driven Networks (Room-3)

Session Chair: Liang Zhao, Shenyang Aerospace University
Invited talk: Robust Beamforming Design in 5G-enabled UAV Communication Systems
Wang Miao, University of Exeter, UK

[Mobile Edge Computing for Intelligent Mining Safety: A Case Study of Ventilator](#)
Yuchun Zhang, Liang Zhao, Kaiqi Yang, Lexi Xu

[A Review of Routing Protocols for Wireless Body Area Networks for Miner Safety](#)
Yuchun Zhang, Liang Zhao, Jiaxing Shang, Junling Shi, Su Peng, Yunchong Guan

[A Practical Workflow in Cleaning Master Data](#)
Shuang Yi, Hailiang Ye

[PORA: Piggybacking-based Opportunistic Routing for Asynchronous Duty-Cycled WSNs](#)
Weiqi Wu, Xingfu Wang, Ammar Hawbani, Taiyaba Qureshi

13:30-15:00   Session AISys-1: AI-driven Smart System (I) (Room-4)

Session Chair: Lexi Xu, ChinaUnicom, China

Invited talk: Digital Twinning for Intelligent Network Management

Yulei Wu, University of Exeter, UK

Challenges and Opportunities for Terrestrial Network Operators in the Air-Space-Ground Integrated Network
Yushan Pei, Shouye Miao, Fuchang Li

Exemplar Loss for Siamese Network in Visual Tracking
Shuo Chang, Hua Lu, Sai Huang, Yifan Zhang

An Improved Small-world Topology for Optimizing the Performance of Echo State Network
Gong Sha, Peng HongYu, Dai Qi, Xiao HanLiang, Chen ZhenKai, Hao TianLu

Research and Application of AI in 5G Network Operation and Maintenance
Mingxin Li, Mingde Huo, Xinzhou Cheng, Lexi Xu

Research on Infrastructure Project Financial System based on Power Grid Big Data
Zhendong Li, Danwei Zhou, Xiangyang Zheng

An Improved Data Discretization Algorithm based on Rough Sets Theory
Han Liu, Chunyu Jiang, Miaoqiong Wang, Kai Wei, Shu Yan

15:10-17:00   Session AISys-2: AI-driven Smart System (II) (Room-4)

Session Chair: Lexi Xu, ChinaUnicom, China

Invited talk: Mobile Multi-hop Networking and Computing for Beyond 5G

Liang Zhao, Shenyang Aerospace University, China

State of Charge Estimation of Low-speed Electric Vehicle Battery using Back Propagation Neural Network
Menglong Xu, Wenguang Wu, Wenwen Zhou, Yuanyuan Ma, Xiaolei Shi, Jun Li

Research on Energy Dispatching Strategy Based on Energy Forecast Algorithm for Data Center
Hanliang Xiao, Hongyu Peng, Sha Gong, Lexi Xu

A Novel 5G Core Network Capability Exposure Method for Telecom Operator
Lin Lin, Bin Zhu, Quangquan Wang, Lexi Xu, Jia Mu

Research on Intelligent Optimization of Massive MIMO Coverage Based on 5G MR
Guoping Xu, Tian Xiao, Tao Tao, Duo Zhang, Wei Li, Hongbing Ma

5G Core Network Framework Based on Artificial Intelligence
Shiyu Zhou, Xiqing Liu, Dengsheng Fu, Xinzhou Cheng, Bin Fu, Zhenqiao Zhao

Research on Photoelectric Effect for Artificial Satellite Communication
Sitong Zhang

Green Light Optimal Speed Advisory Systems under Multi-modal Traffic Environments for Reducing Fuel Consumption
Gang Lu, Yuming Ge, Miaoqiong Wang, Jian Wang, Da Wei, Chen Kang, Rundong Yu

IoTBDH-2020 TECHNICAL SESSIONS

19 December 2020 Saturday

15:10-17:00   Session IoTBDH: Internet of Things of Big Data for Healthcare (Room-3)

Session Chair: Po Yang, University of Sheffield, UK

Invited talk: Intelligent Task offloading and Service Migration in Edge Computing

Jia Hu, University of Exeter, UK

Interoperable Multi-Modal Data Analysis Platform for Alzheimer's Disease Management

Zhen Pang, Shuhao Zhang, Yun Yang, Jun Qi, Po Yang

[Visual Analysis of Biomarkers Selected via Multi-Task Learning for Modeling Alzheimer's Disease Progression](#)
Xulong Wang, Gaoshan Bi, Yu Zhang, Jun Qi, Yun Yang, Po Yang

[Investigation of Side-Polished Panda Fibers for Strain Measurement and Surface Plasmon Resonance-Based Biochemical Sensing](#)
Tiesheng Wu, Zhihui Liu, Huixian Zhang, Zuning Yang, Dan Yang, Yiping Wang

[A Hybrid Hierarchical Model for Accessing Physical Activity Recognition towards Free-living Environments](#)
Jun Qi, Hai-Ning Liang, Jianjun Chen, Xiyang Peng, Lee Newcombe, Po Yang

[Experimental Analysis of Artificial Neural Networks Performance for Accessing Physical Activity Recognition in Daily Life](#)
Xiyang Peng, Xiang Wang, Jun Qi, Yun Yang, Jie Li, Po Yang

Part II: TECHNICAL SESSIONS OF BDCloud-2020

BDCloud-2020 TECHNICAL SESSIONS
18 December 2020 Friday

10:10-12:40 Session BDCloud: Big Data and Cloud Computing (Room-3)

Session Chair: Bipasa Bose, San Jose State University, USA

[Continuous Debugging of Microservices](#)
Hong Zhu, Ian Bayley, Hongbo Wang

[Cloud - Edge Offloading Model for Vehicular Traffic Analysis](#)
Dragi Kimovski, Dijana C. Bogatinoska, Narges Mehran, Aleksandar Karadimce, Natasha Paunkoska, Radu Prodan, Ninoslav Marina

[Blockchain and Homomorphic Encryption for Digital Copyright Protection](#)
Wenyue Sun, Haokun Fang, Shensheng Zheng, Quan Qian

[Hemp Disease Detection and Classification Using Machine Learning and Deep Learning](#)
Bipasa Bose, Jyotsna Priya, Sonam Welekar, Zeyu Gao

[A Neural Attentive Model Using Human Semantic Knowledge for Clickbait Detection](#)
Feng Wei, Uyen Trang Nguyen

[Automatic Road Detection in Traffic Videos](#)
Hadi Ghahremannezhad, Hang Shi, Chengjun Liu

[Energy-aware Multimedia Applications Scheduling on VFI-NoC-MPSoC using as an Edge-device in IoT](#)
Umair Ullah Tariq, Haider Ali, John Panneerselvam, James Hardy, Lu Liu

Part III: TECHNICAL SESSIONS OF SocialCom-2020 and Associated Workshops/Symposia

SocialCom-2020 TECHNICAL SESSIONS
18 December 2020 Friday

15:10-17:00 Session SocialCom_1: Social Network Analysis and Applications (Room-3)

Session Chair: Phoey Lee Teh, Sunway Unviersity, Malaysia

[Identifying the Right Person in Social Networks with Double Metaphone Codes](#)
Joshua D. Hamilton, Carson Leung, Sehaj P. Singh

[Matching User Accounts across Large-scale Social Networks based on Locality-sensitive Hashing](#)
Yongjun Li, Xiangyu Li, Jiaqi Yang, Congjie Gao

[An Analysis of Twitter Responses to the 2019 Ridgecrest Earthquake Sequence](#)
Tao Ruan, Qingkai Kong, Yawen Zhang, Sara K. McBride, Qin Lv

[Music Social Tags Representation in Dimensional Emotion Models](#)
Na He, Sam Ferguson

[Identifying Panic Triggers from Disaster-Related Tweets](#)
Nasser Assery, Xiaohong Yuan, Xiuli Qu, Sultan Almalki, Kaushik Roy

17:10-19:00   Session SocialCom_2: Computational Social Systems for Smart City (Room-3)

Session Chair: Carson Leung, University of Manitoba, Canada

[Exploring the Usage of Online Food Delivery Data for Intra-Urban Job and Housing Mobility Detection and Characterization](#)
Yawen Zhang, Seth Spielman, Qi Liu, Si Shen, Jason Shuo Zhang, Qin Lv

[Practical Strategy of Acquaintance Immunization without Contact Tracing](#)
Zhihao Dong, Yuanzhu Chen, Terrence S. Tricco, Cheng Li, Ting Hu

[Analyzing Societal Impact of COVID-19: A Study During the Early Days of the Pandemic](#)
Swaroop Gowdra Shanthakumar, Anand Seetharam, Arti Ramesh

[Hyper-Casual Endless Game Based Dynamic Difficulty Adjustment System for Players Replay Ability](#)
Zichu Yang, Bowen Sun

[Monitoring the Perception of Covid-19 Vaccine using Topic Models](#)
Swapna S. Gokhale

19 December 2020 Saturday

8:30-10:30   Session SocialCom_3: Human-centered Computing and Systems (Room-3)

Session Chair: Fei Hao, Shaanxi Normal University, China

[A Cluster-based Solution to Achieve Fairness in Federated Learning](#)
Fengpan Zhao, Yan Huang, Akshita Maradapu Vera Venkata Sai, Yubao Wu

[Low-light Image Enhancement based on Joint Decomposition and Denoising U-Net Network](#)
Jiawei Deng, Guangyao Pang, Li Wan, Zhenming Yu

[Adherent Nucilei Edge Detection Based on Caps-Unet](#)
Yuli Chen, Xingwei Li, Huiting Yao, Xue Li, Miao Ma, Zhao Pei, Cheng Lu

[Displacement detection method of QR code reference object based on computer vision](#)
Qiuhui Yang, Xiaoyu Ji, Yanyan Liang

[A Multi-granularity Targeted Covert Collection Scheme for Internet Data](#)
Yi Meng, Yangyang Li, Yashen Wang, Hao Jin, Chun Wei, Xiaoyan Yin

[Resource Allocation Optimization with Guaranteed Security Level for Anti-traceable Access](#)
Bo Jin, Hao Jin, Yashen Wang, Yangyang Li, Xi Luo, Xiaoqing Gong, Xiaoyan Yin

SMMA-2020 TECHNICAL SESSIONS
19 December 2020 Saturday

17:10-19:00   Session SMMA: Social Media Mining and Analysis (Room-3)

Session Chair: Jiaxing Shang, Chongqing University, China

Invited Tak: The effect of multiple interventions to balance healthcare demand for controlling COVID-19 outbreaks
Po Yang, University of Sheffield, UK

Invited Tak: Intelligent Network Transmission for Interactive Media Streaming Services
Xu Zhang, Nanjing University, China

[Application of Iteration Function System for Ceramic Tile Design](#)
Zhiming Chen

[Geographical distance and news diffusion associating with the sentiment of tweets: Case Study on London Bridge Attack 2017](#)
Phoey Lee Teh, Jin Quan Low, Yain-Whar Si

[Design Application of Smart Kitchen for Aging Based on Interactive Behavior Analysis](#)
Yang Wang, Yuechen Ning

Study on Coupled Social Network Public Opinion Communication Based on Improved SEIR
Changbin Jiang, Yaoyuan Zhang, Hu Wang, Yawen Zhou, Yeuqi Zou

DSONAM-2020 TECHNICAL SESSIONS
19 December 2020 Saturday

17:10-19:00   Session DSONAM: Social Network Analysis and Mining (Room-4)

Session Chair: Wang Miao, University of Exeter

Invited talk: Concept-cognitive Learning for Social Network Analysis

Fei Hao, Shaanxi Normal University, China

Invited talk: Applying Machine Learning Towards Dynamic Resource Allocation and Autonomous Management in Network Slicing

Haozhe Wang, University of Exeter, UK

[ITDT: An Iterative Decision Tree-based Approach for Telecom Customer Classification](#)
Jiaxing Shang, Ziwei Jin, Yong Feng, Ran Wei, Baohua Qiang, Wu Xie

[Stock Trend Prediction using Historical Data and Financial Online News](#)
Yuemei Xu, Weihang Lin, Yiran Hu

[Towards Co-Evolution of Random-Walk-Based Embedding and Label Propagation for Node Classification](#)
Ruixuan Zhao, Shenghang Liu, Wei Rao, Hao Xu, Chongning Na, Ruoyu Li

Part IV: TECHNICAL SESSIONS OF SustainCom-2020

SustainCom-2020 TECHNICAL SESSIONS
19 December 2020 Saturday

10:40-12:40   Session SustainCom: Sustainable Computing and Communications (Room-3)

Session Chair: Yulei Wu, University of Exeter, UK

[Spatial-Domain Resource Scheduling for Wireless Computing and Energy Provision in Energy Self-Sustainable F-RAN](#)
Jie Hu, Tingyu Shui, Wei Zhang, Fan Wu, Kun Yang

[Reconfigurable Blockchains for Dynamic Cluster-based Applications](#)
Khalil Saadat, Ning Wang, Xinpeng Wei, Bin Da, Rahim Tafazolli

[An Effective Three-Channel Combination Configuration Method for ZigBee with WiFi Channel Interference](#)
Jianjun Tan, Xianbo Sun, Yong Huang, Jinqiao Yi, Tao Hu, Li Zhu

[A New Controller Placement Technique using Colored Petri-Nets Modelling for SDNs](#)
Wael Hosny Fouad Aly

[Topic Clustering Using Induced Squared Correlation Thresholding with Dimension Reduction](#)
Ayodeji Ayorinde, John Panneerselvam, Lu Liu, Dejun Miao

IUCC-2020 TECHNICAL SESSIONS
17 December 2020 Thursday

10:40-12:40 Session IUCC-1: Ubiquitous System, Services and Applications (I) (Room-4)

Session Chair: Kostas Kolomvatsos, University of Thessaly, Greece

Deep Learning Algorithms for Secure Robot Face Recognition in Cloud Environments
Chiranjeevi Karri, M.S.R. Naidu

The underlying causal network from global dyadic events: allies and rivals in international relations
Lei Jiang

A simulator for reinforcement learning training in the recommendation field
Guangyao Pang, Xiaoying Zhu, Keda Lu, Zizhen Peng, Weitao Deng

Twi Corpus: A Massively Twi-to-Handful Languages Parallel Bible Corpus
Michael Adjeisah, Guohua Liu, Richard Nuetey Nortey, Jinling Song, Khalid Odartey Lamptey, Felix Nana Frimpong

SP-BTM: A Specific Part-of-speech BTM for Service Clustering
Rong Hu, Jianxun Liu, Yiping Wen

A Kernel Density Estimation-Based Variation Sampling for Class Imbalance in Defect Prediction
Yuqing Zhang, Xuefeng Yan, Arif Ali Khan

13:30-16:00 Session IUCC-2: Ubiquitous Computing (Room-4)

Session Chair: Xiaoding Wang, Fujian Normal University, China

Temporal Data Analytics on COVID-19 Data with Ubiquitous Computing
Yubo Chen, Carson K. Leung, Siyuan Shang, Qi Wen

Evaluating Cloud Auto-Scaler Resource Allocation Planning Under High-Performance Computing Workloads
Kester Leochico, Eugene John

Container Scheduling in Blockchain-based Cloud Service Platform
Lei Yu, Philip S. Yu

An Approach to Estimate Power Consumption of a CUDA Kernel
Gargi Alavani, Jineet Desai, Santonu Sarkar

ECOMA: Edge-Cloud Collaborative Framework for Multi-Task Applications
Zhipeng Zhang, Wenting Ma, Qingqing Xu, Renjie Tang, Jinlang Wang, Wai Chen

Real-time detection of cloud tenant malicious behavior based on CNN
Hao Chen, Ruizhi Xiao, Shuyuan Jin

Probabilistic Data Allocation in Pervasive Computing Applications
Kostas Kolomvatsos

Porosity prediction based on GS+GA-XGBoost
Zechen Zheng, Shaowei Pan, Haining Luo, Zhi Guo

16:10-18:40 Session IUCC-3: Ubiquitous Media and Signal Processing (Room-4)

Session Chair: Raad Bin Tareaf, University of Potsdam, Germany

The influence of emotion expression on ergonomics in interface design
Mohan Yang, Bowen Sun, Jianming Yang

A Novel Hierarchical Threshold Secret Image Sharing Scheme
Shiyue Qin, Zhenhua Tan, Hong Li

S-Iter: Using text generation to solve entity sparseness in knowledge reasoning

Xingang Wang, Fengpo Ji, Dong Wang

[A Context-Aware Variational Auto-Encoder Model for Text Generation](#)
Zhiqiang Ma, Chunyu Wang, JI Shen, Baoxiang Du

[Ontology-Based Modeling and Semantic Query for Mobile Trajectory Data](#)
Peng Shao, Ming Tao, Min Zhou, Tian Wang

[Customizing Super-Resolution Framework According to Image Features](#)
Ninghui Yuan, Jingyu Liu, Qiong Wang, Li Shen

[A Film and TV News Digest Generation Method Based on HanLP](#)
Qing Wu, QingSheng Li, JingJing Zhou, XiaoYa Long, YunQing Guan, HongPing Lin

[Does Personality Evolve? A Ten-Years Longitudinal Study from Social Media Platforms](#)
Raad Bin Tareaf, Seyed Ali Alhossein, Christoph Meinel

18 December 2020 Friday

15:10-17:00   Session IUCC-4: Ubiquitous System, Services and Applications (II) (Room-4)
Session Chair: Kostas Kolomvatsos, University of Thessaly, Greece
[A Real-time CSI-based Passive Intrusion Detection Method](#)
Xingang Wang, Yufei Wang, Dong Wang

[Multi-objective Particle Swarm Optimization Guided by Global Diversity and Cross-generation Competition](#)
Jing Zhao, Xiangyu Qu

Contributor Dilemma in Structured Tri-game
Tongda Zhang, Futian Huang, Jun Qian, Xiao Sun, Yueting Chai, Yi Liu

[Performance Analysis of Road Intersections Based on Game Theory and Dynamic Level-k Model](#)
Huisheng Wang, Yuejiang Li, H. Vicky Zhao

[A Data-Driven Dynamic Stochastic Programming Framework for Ride-Sharing Rebalancing Problem under Demand Uncertainty](#)
Xiaoming Li, Chun Wang, Xiao Huang, Yimin Nie

[A Heuristic Region-based Concurrency Bug Testing Approach](#)
Kuo-Cheng Chin, Ren-Song Tsay, Hsin-I Wu

17:10-19:00   Session IUCC-5: Ubiquitous System, Services and Applications (III) (Room-4)
Session Chair: Kostas Kolomvatsos, University of Thessaly, Greece
[Multi-dimensional Analysis of Industrial Big Data Based JSON Document](#)
Minbo Li, Juxiong Xu, Le Han

[Commodity Search Algorithm based on Ant Colony Algorithm](#)
Zhishuo Liu, Zhuonan Han

[Research on Relation Extraction Method Based on Multi-channel Convolution and BiLSTM Model](#)
Tao Sun, Dong Wang

[Predicting Sex and Age using Swipe-Gesture Data from a Mobile Device](#)
Storm P. Davis, Alireza Ashayer, Nasseh Tabrizi

[A Virtual Teaching Machine System Based on Oracle-bone-script Learning](#)
Linlin Zhao, Qingsheng Li, Li Zhang, Zhiqiang Luo, Huahua Jiang, Chunzhu Jiang, Xiangyu Liu

[Distracted Driving Behavior Detection and Identification Based on Improved Cornernet-Saccade](#)
Wei Zheng, Qing Qing Zhang, Zhen Hao Ni, Zhan Guo Ye, Yuan Min Hu, Zhong Jie Zhu

19 December 2020 Saturday

8:30-10:30   Session IUCC-6: Future Networks and Communications (I) (Room-4)

Session Chair: Haojun Huang, Huazhong University of Sicence and Technology, China

A Multi-Threaded Accelerated Drug Combination Pathway Network Implementation
Haolei Ye, Shu Liu, Wei Xiao, Eric McCreath, Xinzhuang Zhang

Dynamic Task Allocation for Robotic Network Cloud Systems
Saeid Alirezazadeh, Luis A. Alexandre

RSFP: Reliable Service Function Placement with the Optimized Resource Consumption in Data Center Networks
Hong Tang, Ao Ku, Wei Liu, Haojun Huang

Network Evaluation and Planning for Large-scale Low Earth Orbit Satellite Constellation Networks
Li Shen, Huanren Zhou, Xiaoting Wang, Wenping Li, Yuanyuan Fan, Shan Wu, Shuaijun Liu

A Novel Strong Cache Consistency Mechanism in ICN Based on Role Division and Lease Model
Shuokang Huang, Shuai Zhu, Kai Lei, Haiyi Lian, Shouyang Wei

An Aggregate Authentication Framework for Unmanned Aerial Vehicle Cluster Network
Jingyi Li, Meng Zhao, Yong Ding, Dennis Y. W. Liu, Yujue Wang, Hai Liang

10:40-12:40   Session IUCC-7: Future Networks and Communications (II) (Room-4)

Session Chair: Hui Lin, Fujian Normal University, China

Heuristically Speeding up Anonymous Dynamic Network Computations
Austin Halper, Dariusz R. Kowalski, Miguel A. Mosteiro

A Quality-Time Model of Heterogeneous Agents Measure for Crowd Intelligence
Zheming Yang, Wen Ji

A Spatio-Temporal Event Model for Unmanned System Swarm
Yukun Yang, Yuan Yao, Gang Yang, Xingshe Zhou

User Identity Linkage across Location-Based Social Networks with Spatio-Temporal Check-in Patterns
Fengxiang Ding, Xiaoqiang Ma, Yang Yang, Chen Wang

Maritime Broadband Communications: Applications, Challenges and an Offshore 5G-virtual MIMO Paradigm
Cunqian Yu, Jingyu Li, Chunfang Zhang, Hang Li, Rongxi He, Bin Lin

An Intelligent Evaluation Method of Application Scenario Complexity Level of Unmanned Swarms
Wenliang Wu, Xingshe Zhou