## Advanced Program Summary

### 17 December 2020 (Thursday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Room 1</th>
<th>Room 2</th>
<th>Room 3</th>
<th>Room 4</th>
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<tbody>
<tr>
<td>8:30-9:00</td>
<td>Opening Ceremony</td>
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<tr>
<td>9:00-9:45</td>
<td>Keynote Speech 1</td>
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<td>9:45-10:30</td>
<td>Keynote Speech 2</td>
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<tr>
<td>10:30-10:40</td>
<td>Break</td>
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### 18 December 2020 (Friday)

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<th>Time</th>
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<th>Room 1</th>
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<th>Room 3</th>
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<tbody>
<tr>
<td>8:30-9:15</td>
<td>Keynote Speech 3</td>
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<tr>
<td>9:15-10:00</td>
<td>Keynote Speech 4</td>
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<td>Break</td>
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### 19 December 2020 (Saturday)

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<thead>
<tr>
<th>Time</th>
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<th>Room 1</th>
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<tbody>
<tr>
<td>8:30-10:30</td>
<td>ISPA-10</td>
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<tr>
<td>10:30-10:40</td>
<td>Break</td>
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<td>10:40-12:40</td>
<td>ISPA-11</td>
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<td>12:40-13:30</td>
<td>Lunch</td>
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<td>13:30-15:00</td>
<td>ISPA-12</td>
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<tr>
<td>15:00-15:10</td>
<td>Break</td>
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<tr>
<td>15:10-17:00</td>
<td>ISPA-13</td>
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<td>17:00-17:10</td>
<td>Break</td>
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<tr>
<td>17:10-19:00</td>
<td>ISPA-14</td>
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Part I: TECHNICAL SESSIONS OF ISPA-2020 and Associated Workshops/Symposia

ISPA-2020 TECHNICAL SESSIONS
17 December 2020 Thursday

10:40-12:40 Session ISPA-1: Parallel Computing and Data Storage (I) (Room-2)
Session Chair: ****

Reinforced Keyphrase Generation with BERT-based Sentence Scorer
Rui Liu, Zheng Lin, Peng Fu, Weiping Wang

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: ****

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

A Hybrid Recommendation Algorithm with Short-term 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
Jiaji Li, Jiahui Hu, Lei Li, Xing Xiong, Xinfeng 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, Xiaolong Liu, Tingxuan Chen, Wu Ji Lei

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

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

ptlmbmalloc2: Reducing TLB Shootdowns with High Memory Efficiency
Stijn Schildermans, Jianchen Shan, Kris Aerts, Xiaoning Ding

Dependent and Heterogeneous Process Migration Based on Checkpoints
Na Yang, Xia Wang, Yun Wang, Qi Zhai

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: ****
Task Merging Based on Scenarios of Functionally Unique Resources for Deadline-Constrained Workflow Scheduling
Pingping Li, Haopeng Chen

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
Doudou Wang, Xin Hu, Quan Xue, Ze Li, Lexi Xu, Weidong Wang

A Novel Influence Maximization-based Dynamic Forwarding Node Selection Scheme in SDVNs
Liang Zhao, Tong Zheng, Mingwei Lin, Anmar Hawbani, Jiaxing Shang

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
Minh-Thuyen Thi, Jean-Marc Pierson, Georges Da Costa

16:10-18:40  Session ISPA-5: Accelerating Deep Neural Networks (Room-2)

Session Chair: ****
A Fast Robustness Quantification Method for Evaluating Typical Deep Learning Models by Generally Image Processing
Haocung Li, Yunjia Cheng, Wei Ren, Tianqing Zhu

DLFusion: An Auto-Tuning Compiler for Layer Fusion on Deep Neural Network Accelerator
Zihan Liu, Jingwen Leng, Quan Chen, Chao Li, Wenli Zheng, Li Li, Minyi Guo

Parallel Variational Autoencoders for Multiple Responses Generation
Miaojin Li, Peng Fu, Zheng Lin, Weiping Wang

Characterizing the I/O Pipeline in the Deployment of CNNs on Commercial Accelerators
Jiansong Li, Zihan Jiang, Fanglein Liu, Xiao Dong, Guangli Li, Xueying Wang, Wei Cao, Lei Liu, Yanzhi Wang, Tao Li, Jianfeng Zhan, Xiaobing Feng

DCDFNE: build dataset to evaluate binary codes differencing 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, Wang Wei, 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:** ****

**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

*Ziyu Guo, Shijun Liu, Li Pan, Qiang He*

User Preference Excitation Network for Sequential Recommendation

*Jiong Wang, Yingshuai Kou, Keng 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, Hai Wang*

Global Context-aware Representation for Implicit Discourse Relation Recognition

*Meilin Zhou, Qi Liang, Peng Zhang, Lu Ma, Dan Luo, Bin Wang*

Honeeye: A Network Traffic Collection Framework for Distributed ICS Honeynets

*Chuan Sheng, Yu Yao, Dongbiao Li, Hongna An, Wei Yang*

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**18 December 2020 Friday**

**10:10-12:40  Session ISPA-7: Graph Neural Networks and Graph Algorithms (Room-2)**

**Session Chair:** ****

Multi-Relational Graph Convolutional Networks for Skeleton-Based Action Recognition

*Fang Liu, Qin Dai, Shengze Wang, Liang Zhao, Xiangbin Shi, Jianzhong Qiao*

NarGNN: Narrative Graph Neural Networks for New Script Event Prediction Problem

*Shuang Yang, Fali Wang, Daren Zha, Cong Xue, Zhihao Tang*

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, Xufeng Xia, Tao Qiu, Jiaying Wang*

Effectively Explaining Missing Nodes on Structural Graph Clustering

*Xufeng Xia, Jida Min, Chuanyu Zong, Jiajia Li, Xiangyu Liu, Tao Qiu*

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

*Chuanyu Zong, Xufeng Xia, Chao Xian, Anzhen Zhang, Rui Zhu, Jiaying Wang*

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

**Session Chair:** ****

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, Huanqiao Song, Bao Guo*

Dynamic Beam Hopping of Multi-beam Satellite Based on Genetic Algorithm

*Libing Wang, Xin Hu, Shijun Ma, Suojie Xu, Weidong Wang*
An Improved Energy Saving Strategy for SDN-based Data Center
Peng HongYu, Xiao HanLiang, Hao TianLu, Wang Wan, 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
Miaojiong Wang, Siyuan Liu, Kai Wei, Han Liu, Chunyu Jiang, Shu Yan, Pengwei Ma

15:10-17:00  Session ISPA-8: Cloud Computing Infrastructure and Applications (Room-2)
Session Chair: ****
Cost-Efficient Request Dispatching in Geo-distributed Cloud Gaming Infrastructure
Yusen Li, Jinping Wu, Bingcheng Ma, Gang Wang, Xiaoguang Liu

A New Paradigm of Cloud Brokerage
Sreekrishnan Venkateswaran, Santonu Sarkar

Comat: An Effective Composite Matching Framework for Content-based Pub/Sub Systems
Tianchen Ding, Shiyou Qian, Weidong Zhu, Jian Cao, Guangtao Xue, Yanmin Zhu, Wenjuan Li

Demystifying the Largest Live Game Streaming Platform via Black-Box Measurement
Xu Zhang, Kai Yang, Rongqi Zhang, Qilin Fan, Hong Tang, Zhan Ma

Secure Spatio-textual Skyline Queries on Cloud Platform
Yiping Teng, Dan Liu, Xiaoting Liu, WeiYu Zhao, Haigang Liu, Chunlong Fan

Scaleplus: Towards Fast Scaling of Distributed Streaming Dataflows
Zan Zong, Lijie Wen, Xiao Liu, Li Lin, Chen Qian, Leilei Lin

17:10-19:00  Session ISPA-9: Blockchain and Data Sharing (Room-2)
Session Chair: ****
TSSN: A Trusted Shared Storage Network based on Blockchain and Bilateral Matching
Shuokang Huang, Maoyu Du, Wei Li, Kai Lei

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 crowdsourcing system for Internet of Things
Min Peng, QinYang Miao, Hui Lin, XiaoDing Wang

A 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

8:30-10:30  Session ISPA-10: Security and Reliability (I) (Room-2)
Session Chair: ****
Privacy Preserving Trajectory Data Publishing with Personalized Differential Privacy
Ruxue Wen, Wenging Cheng, Haojun Huang, Wang Miao, Chen Wang
Constructing Optimal Sparse Decision Tree for Analyzing I-SIG System Attack
Xiaojin Wang, Yingxiao Xiang, Wenjia Niu, Endong Tong, Qi Alfred Chen, Gang Li, Jiqiang Liu, Long Li

Fusion-based Spammer Detection Method by Embedding Review Texts and Weak Social Relations
Jie Wen, Jingyuan Hu, Hongbin Shi, Xin Wang, Jichong Han, Tao Guo

AVDHRAM: Automated Vulnerability Detection based on Hierarchical Representation and Attention Mechanism
Wenyan An, Liwei Chen, Jinxin Wang, Gewangzi Du, Gang Shi, Dan Meng

Secure deduplication method based on autoencoder
Hui Qi, Tianwei Lu, Ligang Cong, Xiaoliang Di

Toward Automatic Mobile Application Fingerprint Extraction from Non-encrypted HTTP Traffic
Yafei Sang, Yan Xu, Yongzheng Zhang, Peng Chang, Shuyuan Zhao, Yijing Wang

10:40-12:40  Session ISPA-11: Security and Reliability (II) (Room-2)
Session Chair: ****
Atomic Restriction: Hardware Atomization to Defend Against Preemption Attacks
Yaosong Lu, Weijie Liu, Wenhao Wang

Analysis of security methods in Vehicular Ad-Hoc Network against Worm Hole and Gray Hole attacks
Krzysztof Stepień, 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, Zhiqiang Zheng, Yudong Yan, Dan Tang

ASPGen: an Automatic Security Policy Generating Framework for AppArmor
Yun Li, Chenglin Huang, Lu Yuan, Yan Ding, Hua Cheng

A Simulation-based Study on the Reliability of Data Center Upgrades
Yichuan Qi, Dan Feng, Binbing Hou, Fang Wang, Jianxi Chen, Yun Liu

IntruDTS: Interactive Visual Analysis System for Intrusion Detection in Time Series
Xuefei Tian, Chenlu Li, Aijuan Qian, Xiaoju Dong

13:30-15:00  Session ISPA-12: Intelligent Algorithms and Optimization (Room-2)
Session Chair: ****
An Improved Sparrow Search Algorithm
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, Zhong Li, Xiaoling Jin, Ningyu Zhang, Shumin Deng, Huajun Chen

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

13:30-15:00  Session NGDN: Next Generation Data-driven Networks (Room-3)
Session Chair: ****
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, Haiiliang Ye

PORA: Piggybacking-based Opportunistic Routing for Asynchronous Duty-Cycled WSNs
Weiqi Wu, Xingfa Wang, Ammar Hawbani, and Taiyaba Qureshi

13:30-15:00  Session AI Sys-1: AI-driven Smart System (I) (Room-4)
Session Chair: ****
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
Mingsin Li, Mingde Hao, 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 ISPA-13: Crowd Science and System Demo (Room-2)
Session Chair: ****
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, Hai Li

Task Assignment with Consensus Decision for Spatial crowdsourcing
Xiaomeng Lian, Wei He, Lizhen Cui, Hai 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

A Two-level Traffic Classification Framework to Identify Website Services
Yu Zhang, Peng Zhang, Guolin Tan, Wei Xia

15:10-17:00  Session IoT BDH: Internet of Things of Big Data for Healthcare (Room-3)
Session Chair: ****
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
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

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

Session Chair: ****
Status 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, Xiqiang Liu, Dengsheng Fu, Xinzhong 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, Miaoxiong Wang, Jian Wang, Da Wei, Chen Kang, Rundong Yu

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

Session Chair: ****
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, Lingzi Li, Kejie Lu, Jianping Wang

MCSEC: Secure Coded Matrix Multiplication Scheme for Edge Computing with Minimum Communication Cost
Tingting Dong, Jin Wang, Fei Gu, Jingyu 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

Part I: 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-2)

Session Chair: ****
Continuous Debugging of Microservices
Hong Zhu, Ian Bayley, Hongbo Wang
Part I: 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-2)

Session Chair: ****
Identifying the Right Person in Social Networks with Double Metaphone Codes
Carson Leung, Sehaj Singh, Josh Hamilton

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-2)

Session Chair: ****
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
17:10-19:00  Session SMMA: Social Media Mining and Analysis + DSONAM: Social Network Analysis and Mining (Room-3)

Session Chair: ****

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
Phoe 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
Yaoyuan Zhang, Changbin Zhang, Hu Wang, Yawen Zhou, Youqi Zou

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

19 December 2020 Saturday

8:30-10:30  Session SocialCom_3: Human-centered Computing and Systems (Room-2)

Session Chair: ****

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 Nuclei Edge Detection Based on Caps-Unet
Yuli Chen, Xingwei Li, Haiting 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, Xiaqing Gong, Xiaoyan Yin

Part I: TECHNICAL SESSIONS OF SustainCom-2020

SustainCom-2020 TECHNICAL SESSIONS
19 December 2020 Saturday

10:40-12:40  Session SustainCom: Sustainable Computing and Communications (Room-2)

Session Chair: ****

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
Part I: TECHNICAL SESSIONS OF IUCC-2020

IUCC-2020 TECHNICAL SESSIONS
17 December 2020 Thursday

10:40-12:40 Session IUCC-1: Ubiquitous System, Services and Applications (I) (Room-2)
Session Chair: ****
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, Zichen Peng, Weitao Deng
Twi Corpus: A Massively Twi-to-Handful Languages Parallel Bible Corpus
Michael Adjeisah, Guohu 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

10:40-12:40 Session IUCC-2: Ubiquitous Computing (Room-4)
Session Chair: ****
Temporal Data Analytics on COVID-19 Data with Ubiquitous Computing
Carson Leung
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
10:40-12:40  Session IUCC-3: Ubiquitous Media and Signal Processing (Room-2)

Session Chair: ****
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_

10:40-12:40  Session IUCC-4: Ubiquitous System, Services and Applications (II) (Room-2)

Session Chair: ****
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_

10:40-12:40  Session IUCC-5: Ubiquitous System, Services and Applications (III) (Room-2)

Session Chair: ****
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

**10:40-12:40 Session IUCC-6: Future Networks and Communications (I) (Room-2)**

**Session Chair: ****

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

Dynamic Task Allocation for Robotic Network Cloud Systems
Saeid Alirezaazadeh 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, Wenhong Li, Yuanyuan Fan, Shan Wu, Shuajjun 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-2)**

**Session Chair: ****

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, Xiaojing 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