ICSINC
2022

Program of

2022 the 10th International Conference on Signal and Information Processing, Networking and Computers

(ICSINC 2022)

Sept. 5th - Sept. 9th, 2022

Xining, China

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Welcome Message from General Co-Chairs

It is our great honor to welcome you to the 10th International Conference on Signal and Information Processing, Network and Computers (ICSINC 2022). The ICSINC 2022 Committee has been monitoring the evolving COVID-19 pandemic. We have decided to hold the conference both online & offline for the safety of all participants after careful consideration.

ICSINC 2022 provides a forum for researchers, engineers, and industry experts to discuss recent development, new ideas and breakthrough in signal and information processing schemes, computer theory, space technologies, big data and so on.

ICSINC 2022 received 208 papers submitted by authors, 146 papers were accepted and included in the final conference proceedings. The accepted papers will be presented and discussed in both regular technical sessions and workshops.

On behalf of the ICSINC 2022committee, we would like to express our sincere appreciation to the TPC members and reviewers for their tremendous efforts. Especially, we appreciate all the sponsors for their generous support and advice, including Springer, and China Unicom. Finally, we would also like to thank all the authors for their excellent work and cooperation.

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Songlin Sun
Yue Wang
Changbo Zhu
ICSINC 2022 General Co-Chairs

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ICSINC 2022 PROGRAM AT A GLANCE

时间		内容	地点
9 月 5 日		线下参会，会议注册签到领取材料； 线上参会，会前线上测试	
9 月 6 日 上午	8:50-9:00	**大会开幕**	Main Meeting Room
	9:00-9:15	会议开幕致辞	
	9:15-9:30	主办方致辞	
	9:30-10:00	领导致辞	
	10:00-10:30	**Keynote1:** Big data empowering the integration of network planning, construction, maintenance and optimization Speaker: Weijun Chen (Head of Cloud and Network Operation Center, China Unicom QingHai Branch)	
	10:30-11:00	**Keynote2:** Research and Thinking on MBSE technology in Spacecraft Field Speaker: Zhao Lingfeng (Information Center, China Academy of Space Technology)	
	11:00-11:30	**Keynote3:** Multimodal Visual Computing and Applications Speaker: Jiande Sun (Shandong Normal University, Professor, Vice Dean of School of Information Science and Engineering)	
9 月 6 日 下午	14:00-17:00	T-1:Information Technology Session 1	Meeting Room 1
9 月 7 日 上午	9:00-12:00	T-1: Information Technology Session 2	Meeting Room 2
9 月 7 日 下午	14:00-17:00	T-2: Space Technology Session 1	Meeting Room 3
9 月 8 日 上午	9:00-12:00	T-2: Space Technology Session 2	Meeting Room 4
9 月 8 日 下午	14:00-17:00	W-1: Big Data Workshop Session 1	Meeting Room 5
9 月 9 日 上午	9:00-12:00	W-2: Big Data Workshop Session 2	Meeting Room 6
9 月 9 日 下午	14:00-15:00	**大会闭幕**	

Technical Sessions

T-1: Information Technology Session 1

Meeting Room 1
Time: September 6, PM 14:00 - 17:00

Paper Title	Paper ID	Authors
A New Multi-Instance Learning Algorithm Integrated with TF-IDF for Entity Relation Extraction in Electronic Medical Records	10	Yiyang Xiong, Yajuan Qiao, Shilei Dong, Xuezhi Zhang and Hua Tan
An S-band Antenna using Meta-surface for Satellite TT & C Test	12	Xiangwei Ning, Fanhui Zhou, Liang An, Shuo Feng, Pengfei Zhao and Aixin Chen
A Deep Learning Algorithm Using Feature Engineering to Adjust Attention Mechanisms and Neural Network for Cloud Security Detection	13	Yiyang Xiong, Yajuan Qiao, Shilei Dong, Xuezhi Zhang and Hua Tan
Design and implementation of A Test and Verification System for Spaceborne Synthetic Aperture Radar	17	Liang An, Jian Liang, Li Yang, Zhiya Hao and Zhongjian Yu
An Optimized Scheme for Telecommand Transmission	18	Liu Bo, Hao Weining and Wang Hongguang
The design and implementation of a ranging system based on the DSSS	21	Yingpeng Cao, Fu Li, Shuyi Qin, Wei Zhang and Zihong Yuan
Transmission Efficiency Improvement of Ka-band VCM Satellite-to-ground Data Transmission System of LEO Remote Sensing Satellite Based on DVB-S2X	22	Zhongguo Wang and Dabao Wang
Application of Grey Approximation Ideal Solution Ranking Methods in optimal selection of satellite initial orbits	23	Yang Lei, Wang Fan and Bo Zhenyong
Anti-interference control for on-orbit servicing spacecraft formation under communication resource limitation	25	Tao Wang, Yingchun Zhang, Heli Gao, Jie Liu and Hongchen Jiao
Filter and closed loop control technology of piezoelectric drivers	27	Lu Qian, Ren Bin and Zhang Le
A Novel Back-Feed Double-Layer Microstrip Antenna	30	Pengfei Zhao, Dabao Wang, Mingxuan Wu, Xiangwei Ning, Xiaojuan Li and Jinyuan Ma

A full-digital test method for satellite-borne software	31	Pan Xin, Jiao Rong-Hui and He Jing
3D Warehousing: Enabling Intelligent Warehousing Visualization Based on Three.js	32	Wenqian Shan, Wenbo Wan, Anyi Chen, Leichao Ren, Jiande Sun, Meng Fang and Yantong Zhan
Deep Learning Neural Networks with Auto-adjustable Attention Mechanism for Server Fault Diagnosis Using Log Data	34	Yiyang Xiong, Yajuan Qiao, Shilei Dong, Xuezhi Zhang and Hua Tan
FPGA-Based High-Speed Remote Sensing Satellite Image Data Transmission System	35	Yifeng He, Xiaojun Lu, Qian Liu, Yu Chen and Gang Dong
A hierarchical classification algorithm of spacecraft telemetry data based on time series characteristics	36	Peng Wan, Tang Li, Da Tang and Qianqian Zhang
A Saliency-Transformer Combined Knowledge Distillation Guided Network for Infrared Small Target Detection	37	Wei Zhang, Wenquan Feng, Menghao Li, Shuchang Lyu and Ting-Bing Xu
Application of Frequency Domain Filtering in Edge Detection	40	Bo Li and Hongyan He
Research on Cloud-edge Collaboration Based on Object torage for Internet of Things	41	Qiuhong Zheng, Dan Liu, Yun Shen and Peng Ding
Industrial Defect Detection System based on Edge-cloud Collaboration and Task Scheduling Technology	42	Yuying Xue, Yun Shen and Huibin Duan
Actuator Grouping Optimization Method of Antenna Reflectorbased-on Ant Colony Algorithm	45	Yan Du, Songjing Ma, Tao Ma, Xiangshuai Song and Jiayou Zhang
A Method to Measure the Quality of a Cloud Network Across Multiple Resource Pools	46	Yue Su, Ruihao Chen, Wei Li, Weibo Zhao and Fei Ma
A New Cloud Computing Deployment Model：Proprietary Cloud	47	Weibo Zhao, Yue Su, Fei Ma, Ruihao Chen and Wei Li
Overview of the Development of Secure Access Service Edge	48	Ruihao Chen, Yue Su, Weibo Zhao, Fei Ma and Wei Li
Optimization and Numerical Investigation of Micro-Pin-Fin Structure on Heat Sink with Checkerboard Nozzles	55	Huajie Lv, Kehan He and Xing Ju
A method of design and evaluation of X-ray communication in black-out area	62	Fangyuan Xia, Bo Wang, Guoting Zhang, Yabo Yuan, Jian Wu, Yingjun Zhang, Yao Li, Furui Zhang, Yun Du, Zhenkun Tan and Tong Su
A Robust DOA Estimation Method based on Auxiliary Sensors and Power Inversion	67	Yihao Song, Puming Huang, Lede Qiu, Shuai Li and Ming Li
Diffusion Convolution Graph Attention Network for Spatial-temporal Prediction	83	Xiang Yin, Lei Wu, Yanqiang Zhang, Yanni Han and Kun Zhai
Research on the Anti-interference of a Satellite Telecommand Interface	89	Shifeng Gao, Jingang Wang，Luyuan Wang，Zhenyu Wu and Duanguo Si

Paper Title	Paper ID	Authors
Fast Estimation Technology of Orbit Information for Non-cooperative Space Targets Based on AREKF Filtering Theory	93	Zhuo Zhang ,Gang Liu , Henghai Fan, Dongmei Kuang , Anliang Li and Ruixi Gaoya

T-1: Information Technology Session 2

Meeting Room 2
Time: September 7, AM 09:00 - 12:00

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Research on Method of On-Orbit Evolution for Aerospace Control Software	103	Xiaofeng Li, Xiaogang Dong, Bin Gu, Ming Zhao, Ruiming Zhong, Yi Li and Jing Wang
Research on Automatic Assembly Technology for Spacecraft System	118	Zejian Chen, Jizhi Yang, Jianping Xu, Yangcheng Zhang, Yongliang Li and Yi Yue
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Research on application efficiency analysis method of remote sensing satellite for emergency	161	Gao Han, Bai Zhaoguang, Che Xiaoling, Zhao Liang, Wu Bin, Wang Chao, Zhu Jun and Bai Yuchen
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Discussion on the Application of Contributing Student Pedagogy in Vocational Education "Computer Network Technology"	179	Fanjie Lv and Jiande Sun
Research on NURBS Interpolation Algorithm Based on Newton Iteration and Adams Equation	180	Yunsen Wang, Lin Li, Chengzhi Ma, Sipei Shao and Yangchuang Cao
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Optimization of AVS3 Intra Derived-Tree Mode Algorithm Based on DCT Coefficients	192	Chenggang Xu, Fuyun Kang, Yi Wu and Lei Chen
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T-2: Space Technology Session 1

Meeting Room 3
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Precision Orbit Determination for LEO Based on BDS Navigation Data	28	Chao Li, Xiusong Ye, Hong Ma, Shouming Sun and Yang Yang
Research and practice of electrostatic grounding technology of aerospace electronic products based on intelligent active protection concept	29	Ying Zhu, Dong Wang, Ke Li, Wei Qiao, Yijian Zheng and Wenze Qi
Investigation on feasibility of covert TT&C scheme using Satellite payload channel	38	Jie Chen, Haiming Qi and Fengchun Wang
A Satellite Imaging Stability Monitoring Method Based on Lunar Calibration Technology	43	Yong-Chang Li, Qiang Cong and Shun Yao
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The Design and Implementation of Magnetic Control of Ultra Quiet Control System in Gravity Satellite	86	Bin Guan, Yiwu Liu, Qirui Liu, Yan Li and Jiakun Fan
Intercomparison of On-Orbit Consistency of Radiometric Calibraion between Two Sensor Calibration Spectrometers of HY Satellite	99	Huiting Gao, Yue Ma and Qingjun Song
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Application and Process of Inclination Adjustment of Satellites in Sun Synchronous Orbit	172	Shenggang Wang and Jun Yuan
Analysis Method for Isolation Index of Transceiver Link of Space Ground TT&C Equipment	178	Jingyu Zhao, Jianxiao Zou, Shuo Wang, Yalong Yan and Ben Su
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T-2: Space Technology Session 2

Meeting Room 4
Time: September 8, AM 09:00 - 12:00

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W-1: Big Data Workshop Session 1

Meeting Room 5
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A Method of 5G core network Service Fault Diagnosis	7	Shiyu Zhou, Yong Wang, Xiqing Liu, Xinzhou Cheng, Zhenqiao Zhao and Tian Xiao
Research on User Behavior Credibility Evaluation Model in Trusted Network	9	Anshun Zhou, Suimin Wang, Mingde Huo, Jianzhi Wang, Yuwen Huo, Shihan Fu and Lexi Xu

Research and Application of Key Technologies of Intelligent Manufacturing Based on 5G Vehicle	11	Shangyu Tang, Mingde Huo, Yan Zhang, Xin Zhao, Yuwen Huo, Ying Ji and Guoyu Zhou
Research on key technologies of 5GC network intelligent operation under the background of digital transformation	15	Zhenqiao Zhao, Xiqing Liu, Yong Wang, Jie Miao, Shiyu Zhou, Xinzhou Cheng, Lexi Xu, Xin He and Icy Yan
Research on Location Algorithm of Mobile Network Based on Hidden Markov Model	16	Bei Li, Wei Zhao, Kai Zhou, Lexi Xu, Guanghai Liu, Tian Xiao, Chen Cheng, Lu Zhi, Wei Zhang and Ziwei Zhu
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W-2: Big Data Workshop Session 2

Meeting Room 6
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Look forward to meeting you next year.

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