

2020 IEEE 3rd International Conference on Electronics and Communication Engineering (ICECE 2020)

**Xi'An, China
14 – 16 December 2020**



**IEEE Catalog Number: CFP20BWB-POD
ISBN: 978-1-7281-9259-8**

**Copyright © 2020 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP20BWB-POD
ISBN (Print-On-Demand):	978-1-7281-9259-8
ISBN (Online):	978-1-7281-9258-1

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

2020 IEEE the 3rd International Conference on Electronics and Communication Engineering - ICECE 2020

Preface.....	viii
Conference Committees	ix

◆ Mobile Communication and Satellite Communication System

Optimization Design of Global Low-orbit Satellite Constellation for Multi-fold Coverage	1
<i>Ge Zheng, Yiping Yao, Dongsheng He, Hongcui Diao</i>	
Micro-nano Satellite Resource Allocation Algorithm Based on Mixed Iterative PSO	6
<i>Ran ZHANG, Mingchen SUN, Chengsheng PAN</i>	
Perturbed ISL Analysis in LEO Satellite Constellation	12
<i>Xiaoyi Xu, Chunhui Wang, Zhonghe Jin</i>	
Design of Data Acquisition Service Platform Based on Satellite Mobile Communication.....	18
<i>Jun Zheng, Changsheng Shan, Ligang Fei, Jinghui Chang, Qiang Li</i>	
A UHF RFID Communication Link Rate Adjustment Strategy and Implementation.....	22
<i>Hao Xianren, Zhao Dongyan, Tang Xiaoke, Li Dejian, Feng Xi, Shen Hongwei</i>	
Active Optical Routing Assignment Algorithm for Relay Protection Services in Smart Grid Communications	26
<i>Junfeng Lv, Zifan Li, Fang Chen, Bozhong Li, Zhengyuan Liu</i>	
Secure Short-Packet Communications in Cognitive Internet of Things.....	31
<i>Yong Chen, Zhongwu Xiang, Xiaoqiang Qiao, Tao Zhang, Jiang Zhang</i>	

◆ Communication and Information System

Multi-user Grouping Algorithm in Multi-carrier NOMA System.....	37
<i>Gang Chen, Weijun Zheng, Jianxin Chu, Zhenyu Zhang, Yong Zhang</i>	
None Degradation Impulse Filter Bank with Index Modulation Transmission.....	42
<i>Fusheng Zhu, Jin Jiang, Zhengrong Lai, Yongjun Li</i>	
Comparison of Position Dilution of Precision (PDOP) at System and User Level in Multi-GNSS Positioning	47
<i>Shuocheng Yuan, Yunlong Teng, Huiting Li</i>	
A Design of Synchronization Scheme in Asynchronous Scrambled Code Multiple Access (A-SCMA) System	51
<i>Li Huan, Zhai Shenghua, Wang Wei</i>	
An Uplink Resource Scheduling Scheme for Narrowband Internet of Things in Smart Grid.....	56
<i>Xudong Wang, Zhenwei Li, Xin Jin, Hao Yu, Caihua Liu</i>	
Radio Regulatory Knowledge Graph Framework and Its Application.....	61
<i>Qiannan Lu, Chunxin Li, Jingjing Yang, Peng Li, Ming Huang, Lin Li</i>	
Performance Analysis on Full-duplex Hybrid ROF-VLC System Based on SIPMOFDM	66
<i>Qi Tang, Kunying Li, Xingming Liu</i>	
Simulation and Classification of Mobile Communication Base Station Downlink Signal Based on CNN.....	71
<i>Wei Sun, Ming Huang, Jingjing Yang, Xiaoyan Wang</i>	
Intelligent Cognitive Anti-Jamming Algorithm Based on Long Short-Term Memory Network	76
<i>Yuanming Ding, Fanghao Yang, Jianxin Feng</i>	
Research on Seismic Signal Classification and Recognition Based on EEMD and CNN.....	83
<i>Bingjun Li, Hanming Huang, Tingting Wang, Mengqi Wang, Pengfei Wang</i>	
A Fast GPS Signal Acquisition Method Based on Fuzzy Logic	89
<i>Yushan Lu</i>	

LDPC Decoder Based on Chisel.....	93
<i>Bingrui Wu</i>	
◆ Computer and Information Engineering	
A Novel and Efficient Link Discovery Mechanism in SDN.....	97
<i>Haojie Tong, Xianhai Li, Zhou Shi, Ye Tian</i>	
Multi-objective Optimization of Unit Restoration During Network Reconstruction Based on DE-EDA.....	102
<i>Tao Wang, Hainan Zhu, Zhonggang Wang, Yijie Wang, Na Sun, Yunhui Dong</i>	
Review on the Research of K-means Clustering Algorithm in Big Data.....	107
<i>Chen Jie, Zhang Jiyue, Wu Junhui, Wu Yusheng, Si Huiping, Lin Kaiyan</i>	
An Efficient Formal Verification Method in I/O Multiplexing Module Based on VC Formal CC.....	112
<i>Liyong Duan, Yi Hu, Hao Liu, Wennan Feng, Jie Gan</i>	
A Distributed Formation Stabilization Control Protocol of Nonholonomic Unicycle Agents.....	117
<i>Dehui Kan, Bin Xing, Yixin Zhao, Wei Huang, Linqun Zhu, Wenjing Xie</i>	
Holographic Classroom Based on Digital Twin and Its Application Prospect.....	122
<i>LIU Shuguang, BA Lin</i>	
New Adaptive Method for Extrating Fundamental Vibration Component in the Process of Rotor Startup and Shutdown.....	127
<i>Jiixin Min, Xining Zhang</i>	
Few-shot Self-optimization Learning Based on Deep Metric.....	134
<i>Yong Ma, Quansheng Dou</i>	
A Data Feature Recognition Method Based On Deep Learning.....	140
<i>Jintao Wang, Guangquan Feng, Long Zhao, Lirun Zhang, Fei Xie</i>	
A Model Based Heterogeneous Data Collaboration Method.....	145
<i>Junjie Xue, Junhua Zhou, Guoqiang Shi, Yanhong Jiang, Bowen Wei, Hongyan Quan</i>	
Multi-objective Optimization Scheduling Model Based on NSGA-II Algorithm.....	149
<i>Ruifeng Bian, Wenyi Tan, Yilun Li, Yichen Hou</i>	

◆ Image Analysis and Processing

Generating Cancellable Fingerprint Template Using Local-Similar Image..... 157

Zhaozheng Li, Ying Bao, Weimin Lei

DCFD-Net for Segmentation on MR Images of Right Ventricle..... 162

Sheng Yuwei, Zhao Xingrong, Liu Zheng, Chen Xueqin

Sparse Naïve Bayes Base on Entropy Correlation for GPR Image Denoising..... 167

Dongyu Wang, Da Yuan, Cui Miao

Myanmar Handwritten Character Recognition from Similar Character Groups Using *K*-Means and Convolutional Neural Network..... 172

Chit San Lwin, Wu Xiangqian

Study on Integrative Control between the Stereoscopic Image and the Tactile Feedback in Augmented Reality 177

Xiaoyong Yao, Yuwen Pei, Pingdong Wu, Man-ling Huang

A Lightweight Action Recognition Method for Unmanned-Aerial-Vehicle Video 181

Meng Ding, Ning Li, Ziang Song, Ruixing Zhang, Xiaxia Zhang, Huiyu Zhou

An Improved Faster R-CNN for Colorectal Cancer Cell Detection 186

Yang Yu, Qun Yang, Shaohan Liu

◆ Modern Electronic Information Technology and Application

Study on Phase Correction of Electromagnetic Wave Propagation in Gyrotron 191

Guohui Zhao, Jing Xiao

Progress and Prospect of Contactless Power Supply Technology in Rail Transit..... 196

LIU Shuguang, YE Zhenxing, LU Wenbing

Designs of Filter Based on Metamaterial Transmission Line 201

Peng Li, Ming Huang, Jing Jing Yang, Bao Jing Hu, Qian Nan Lu, Ru Sheng Xie

A Framework for Xilinx SRAM-based FPGA Functional Test..... 207

Zong Jie Xiang, Lanlai Wang, Yun Jiang, Dapeng Liu, Jing Wang

Study of Behaviors of Electronic Amplifiers Using Nichols Chart.....	211
<i>MinhTri Tran, Anna Kuwana, Haruo Kobayashi</i>	
Distribution Network Information Modeling Method Based on CIM	216
<i>Yanfei Li, Yijie Li, Xiaofeng Bao, Na Tang</i>	
Surface Roughness Analysis of POF Coupler Post Conditioning Processes and Its Impact on Small World Networks.....	223
<i>Hadi Guna, Norhana Arsad, Mohd. Syuhaimi Ab-Rahman</i>	
Regional Electricity Sales Forecasting Research based on Big Data Application Service Platform.....	229
<i>Cui Qi, Sun Mingyue, Mi Na, Wang Honggang, Jian Yanhong, Zhu Jing</i>	
Design of Phase Correction Mirror System Based on Gaussian Field Propagation Theory	234
<i>Guohui Zhao</i>	
Research on All Electric Computer Interlocking System for Urban Transit.....	239
<i>Haonan Feng, Kejia Xing, Yunhun Guan, Jungao Wang</i>	
A Video Object Detector Based on Deep Reinforcement Learning and Correction Module	245
<i>Rongrong Fei, Ling Ou</i>	
Allocation Method of Voltage Sag Based on User's Quantitative Demand	250
<i>Yan Lin, Zhixuan Liu, Pei Du, Daoshan Huang, Hanyang He, Xianyong Xiao</i>	