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Listed are the information of Feature Topics and papers published in 2021

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Feature Topic: Wireless Communications with Reconfigurable Intelligent Surfaces

Guest Editors: Caijun Zhong, Shi Jin, Marco Di Renzo, Jun Fang

2021, Vol.18, No. 3

Feature Topic: Terahertz Wireless Communications

Guest Editors: Zhi Chen, Chong Han, Xianbin Yu, Guangjian Wang, Nan Yang, Mugen Peng

2021, Vol.18, No. 5

Feature Topic: Time-Critical Communication and Computation for Intelligent Vehicular Networks

Guest Editor: Shanzhi Chen, Tommy Svensson, Sheng Zhou, Shan Zhang

2021, Vol.18, No. 6

Feature Topic: Collaborative Intelligence for Vehicular Internet of Things

Guest Editor: Celimuge Wu, Kok-Lim Alvin Yau, Carlos Tavares Calafate, Lei Zhong

2021, Vol.18, No. 7

Feature Topic: Advanced Computing and Endogenous Security

Guest Editor: Hongchao Hu, Zhen Ling, Yuewu Wang, Qi Li, Liang Jin, Jiangxing Wu

2021, Vol.18, No. 8

Feature Topic: Multiple Dimension Collaborative Operation Techniques and Networking for Air-Space-Ground Integrated System: Technologies and Applications

Guest Editor: Qinyu Zhang, Xuejun Sha, Fei Ji, Ning Ge

2021, Vol.18, No. 9

Feature Topic: Machine Learing for Mobile Edge Computing

Guest Editor: Shangguang Wang, Qiang Duan, Kok-Seng Wong, Claudio A. Ardagna

2021, Vol.18, No. 11

Feature Topic: Wireless Security Challenges and Countermeasures for Dynamic Spectrum Sharing

Guest Editor: YingChang Liang, Yue Gao, Liang Xiao, Yulong Zou, Guoru Ding

2021, Vol.18, No. 12

2021 年出版文章

January

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Edge Caching in Blockchain Empowered 6G

Keywords: blockchain; 6G; edge caching; physical layer security

Cite as: Wen Sun, Sheng Li, Yan Zhang"Edge Caching in Blockchain Empowered 6G"[J]China Communications,vol.18,no.1,pp.1-17,2021

Spectrum Prediction Based on GAN and Deep Transfer Learning: A Cross-Band Data Augmentation Framework

Keywords: cognitive radio; cross-band spectrum prediction; deep transfer learning; generative adversarial network; cross-band data augmentation framework

Cite as: Fandi Lin,Jin Chen,Guoru Ding,Yutao Jiao,Jiachen Sun,Haichao Wang"Spectrum Prediction Based on GAN and Deep Transfer Learning: A Cross-Band Data Augmentation Framework"[J]China Communications,vol.18,no.1,pp.18-32,2021

Layered D2D NOMA

Keywords: non-orthogonal multiple access; device-to-device; sum-rate; outage probability

Cite as: Jinjuan Ju, Jinyuan Gu, Guoan Zhang"Layered D2D NOMA"[J]China Communications,vol.18,no.1,pp.33-42,2021

Fully Connected Feedforward Neural Networks Based CSI Feedback Algorithm

Keywords: massive MIMO; CSI feedback; deep learning; fully connected feedforward neural network

Cite as: Ming Gao, Tan-ming Liao, Yu-bin Lu"Fully Connected Feedforward Neural Networks Based CSI Feedback Algorithm"[J]China Communications,vol.18,no.1,pp.43-48,2021

Erasure-Correction-Enhanced Iterative Decoding for LDPC-RS Product Codes

Keywords: low-density parity-check codes; product codes; iterative decoding; Reed-Solomon codes

Cite as: Weigang Chen, Ting Wang, Changcai Han, Jinsheng Yang"Erasure-Correction-Enhanced Iterative Decoding for LDPC-RS Product Codes"[J]China Communications,vol.18,no.1,pp.49-60,2021

Power allocation for NOMA in D2D Relay Communications

Keywords: device-to-device communication; Nonorthogonal multiple access; decode-and-forward relaying; power allocation; rate analysis

Cite as: Yan Cai, Chunhua Ke, Yiyang Ni, Jun Zhang and Hongbo Zhu"Power allocation for NOMA in D2D Relay Communications"[J]China Communications,vol.18,no.1,pp.61-69,2021

A Game-Theoretic Perspective on Resource Management for Large-scale UAV communication networks

Keywords: large-scale UAV communication networks; resource management; game-theoretic model

Cite as: Jiaxin Chen, Ping Chen, Qihui Wu, Yuhua Xu, Nan Qi, Tao Fang"A Game-Theoretic Perspective on Resource Management for Large-scale UAV communication networks"[J]China Communications,vol.18,no.1,pp.70-87,2021

Joint Trajectory and Power Optimization for Securing UAV Communications Against Active Eavesdropping

Keywords: UAV communications; active eavesdropping; physical-layer security; secrecy rate maximization; power control; trajectory design
Cite as: Bin Duo, Junsong Luo, Yilian Li, Hao Hu, Zibin Wang"Joint Trajectory and Power Optimization for Securing UAV Communications Against Active Eavesdropping"[J]China Communications,vol.18,no.1,pp.88-99,2021

Intelligent Immunity based Security Defense System for Multi-access Edge Computing Network

Keywords: intelligent immunity; security defense; multi-access edge computing; network security
Cite as: Chengcheng Zhou, Yanping Yu, Shengsong Yang, Haitao Xu"Intelligent Immunity based Security Defense System for Multi-access Edge Computing Network"[J]China Communications,vol.18,no.1,pp.100-107,2021

CNN-based Intelligent Safety Surveillance in Green IoT Applications

Keywords: convolutional neural network (CNN); internet of things (IoT); intelligent safety surveillance; deep learning; auto-supervised method
Cite as: Wengang Cao, Jianing Zhang, Changxin Cai, Quan Chen, Yu Zhao, Yimo Lou, Wei Jiang, and Guan Gui"CNN-based Intelligent Safety Surveillance in Green IoT Applications"[J]China Communications,vol.18,no.1,pp.108-119,2021

An improved Equalization with Real Interference Prediction scheme of the FBMC/OQAM system

Keywords: equalization; ERIP; FBMC/OQAM; interference cancellation;time-varying multipath
Cite as: Feng Yang; Yue Wang; Lianghui Ding; Liang Qian"An improved Equalization with Real Interference Prediction scheme of the FBMC/OQAM system"[J]China Communications,vol.18,no.1,pp.120-129,2021

Characteristic Insights on Industrial Cyber Security and Popular Defense Mechanisms

Keywords: industrial cyber threats; industrial characteristics; vulnerabilities; security mechanisms and viewpoints

Cite as: Ming Wan, Jiawei Li, Ying Liu, Jianming Zhao, Jiushuang Wang"Characteristic Insights on Industrial Cyber Security and Popular Defense Mechanisms"[J]China Communications,vol.18,no.1,pp.130-150,2021

Cryptanalysis and improvement of a new certificateless signature scheme in the standard model

Keywords: certificateless; signature; standard model; Attack

Cite as: Chenhuang Wu, Hui Huang, Kun Zhou, Chunxiang Xu"Cryptanalysis and improvement of a new certificateless signature scheme in the standard model"[J]China Communications,vol.18,no.1,pp.151-160,2021

Digital signature based on ISRSAC

Keywords: ISRSAC; digital signature; proxy signature; sequential multi-signature; broadcasting multisignature

Cite as: Teng Yang, Yanshuo Zhang, Song Xiao, Yimin Zhao"Digital signature based on ISRSAC"[J]China Communications,vol.18,no.1,pp.161-168,2021

Individual Identification of Electronic Equipment Based on Electromagnetic Fingerprint Characteristics

Keywords: signal fingerprints; histogram-based signal feature; starting point detection; signal level cooccurrence matrix; ensemble Learningn

Cite as: Han Xu, Hongxin Zhang, Jun Xu, Guangyuan Wang, Yun Nie, Hua Zhang"Individual Identification of Electronic Equipment Based on Electromagnetic Fingerprint Characteristics"[J]China Communications,vol.18,no.1,pp.169-180,2021

Edge Coloring of Graphs with Applications in Coding Theory

Keywords: low-density parity-check code; edge coloring; Quasi-cyclic LDPC code; girth; AWGN channel Received:

Cite as: Ghaffar Raeisi, Mohammad Gholami"Edge Coloring of Graphs with Applications in Coding Theory"[J]China Communications,vol.18,no.1,pp.181-195,2021

Clustering and Resource Allocation Strategy for D2D Multicast Networks with Machine Learning Approaches

Keywords: device-to-device multicast communication; clustering; energy efficiency; resource allocation; Q-Learning

Cite as: Fan Jiang, Lan Zhang, Changyin Sun, Zeng Yuan"Clustering and Resource Allocation Strategy for D2D Multicast Networks with Machine Learning Approaches"[J]China Communications,vol.18,no.1,pp.196-211,2021

MimicCloudSim: an environment for modeling and simulation of mimic cloud service

Keywords: cyber mimic defense; mimic cloud service; simulation; dynamic heterogeneous redundancy

Cite as: Liming Pu, Jiangxing Wu, Hailong Ma, Yuhang Zhu, Yingle Li"MimicCloudSim: an environment for modeling and simulation of mimic cloud service"[J]China Communications,vol.18,no.1,pp.212-221,2021

Energy Efficiency Maximization Strategy for Sink node in SWIPT-Enabled Sensor-Cloud based on Optimal Stopping Rules

Keywords: sensor-cloud; SWIPT; optimal stopping theory; energy efficiency; channel quality

Cite as: Zhe Wang, Lina Ge, Taoshen Li, Guifen Zhang, Min Wu"Energy Efficiency Maximization Strategy for Sink node in SWIPT-Enabled Sensor-Cloud based on Optimal Stopping Rules"[J]China Communications,vol.18,no.1,pp.222-236,2021

February

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Future 5G-Oriented System for Urban Rail Transit: Opportunities and Challenges

Keywords: urban rail transit; train autonomous circumambulate system (TACS); prospective review; the 5th-generation (5G); train to train (T2T) communication; reinforcement learning (RL)

Cite as: Junhui Zhao, Jin Liu, Lihua Yang, Bo Ai, Shanjin Ni"Future 5G-Oriented System for Urban Rail Transit: Opportunities and Challenges"[J]China Communications,vol.18,no.2,pp.1-12,2021

Multi-stage Hierarchical Channel Allocation in UAV-assisted D2D Networks: A Stackelberg Game Approach

Keywords: UAV; D2D; multi-stage heterogeneous spectrum access; stackelberg game

Cite as: Tao Fang, Dan Wu, Meng Wang, Jiaxin Chen"Multi-stage Hierarchical Channel Allocation in UAV-assisted D2D Networks: A Stackelberg Game Approach"[J]China Communications,vol.18,no.2,pp.13-26,2021

Performance Analysis of Uplink Massive Spatial Modulation MIMO Systems in Transmit-correlated Rayleigh Channels

Keywords: bit error rate; massive MIMO; spatial modulation; transmit correlation; shadow fading; ZF receiver

Cite as: Qiyishu Li, Xiangbin Yu, Mingfeng Xie, Ning Li, Xiaoyu Dang"Performance Analysis of Uplink Massive Spatial Modulation MIMO Systems in Transmit-correlated Rayleigh Channels"[J]China Communications,vol.18,no.2,pp.27-39,2021

Development of Hybrid ARQ Protocol for the Quantum Communication System on Stabilizer Codes

Keywords: quantum communication system; hybrid ARQ; quantum stabilizer codes; reliability; security.

Cite as: Jiaxin Li, Zhongwen Guo, Honhyang Ma"Development of Hybrid ARQ Protocol for the Quantum Communication System on Stabilizer Codes"[J]China Communications,vol.18,no.2,pp.40-48,2021

Coded Modulation Faster-than-Nyquist Transmission with Precoder and Channel Shortening Optimization

Keywords: faster-than-Nyquist; coded modulation; information rate; minimum Euclidian distance; precoder; channel shortening

Cite as: Hui Che, Yong Bai"Coded Modulation Faster-than-Nyquist Transmission with Precoder and Channel Shortening Optimization"[J]China Communications,vol.18,no.2,pp.49-64,2021

Analysis and Design of Scheduling Schemes for Wireless Networks with Unsaturated Traffic

Keywords: markov chain; unsaturated traffic; performance analysis; scheduling

Cite as: Jianfei Li,Juan Wen,Min Sheng"Analysis and Design of Scheduling Schemes for Wireless Networks with Unsaturated Traffic"[J]China Communications,vol.18,no.2,pp.65-85,2021

A Survey on Routing Algorithms for Opportunistic Mobile Social Networks

Keywords: OMSNs; routing algorithms; social features; selfishness; incentive mechanism

Cite as: Ying Cai, Haochen Zhang, Yanfang Fan, Hongke Xia"A Survey on Routing Algorithms for Opportunistic Mobile Social Networks"[J]China Communications,vol.18,no.2,pp.86-109,2021

BC-BLPM: A Multi-Level Security Access Control Model Based on Blockchain Technology

Keywords: multi-level security (MLS); access control; blockchain; multi-chain; smart contract

Cite as: Xiang Yu, Zhangxiang Shu, Qiang Li, Jun Huang"BC-BLPM: A Multi-Level Security Access Control Model Based on Blockchain Technology"[J]China Communications,vol.18,no.2,pp.110-135,2021

An Efficient Trajectory Planning for Cellular-Connected UAV under the Connectivity Constraint

Keywords: UAV communication; trajectory planning; cellular-connected UAV; connectivity requirement

Cite as: Dingcheng Yang, Qian Dan, Lin Xiao, Chuankuan Liu, Laurie Cuthbert"An Efficient Trajectory Planning for Cellular-Connected UAV under the Connectivity Constraint"[J]China Communications,vol.18,no.2,pp.136-151,2021

Providing Guaranteed Network Performance across Tenants: Advances, Challenges and Opportunities

Keywords: cloud computing; network performance; guaranteed bandwidth; guaranteed delay

Cite as: Chengyuan Huang, Jiao Zhang, Tao Huang, Yunjie Liu"Providing Guaranteed Network Performance across Tenants: Advances, Challenges and Opportunities"[J]China Communications,vol.18,no.2,pp.152-174,2021

Computing Power Network：The Architecture of Convergence of Computing and Networking towards 6G Requirement

Keywords: 6G; edge computing; cloud computing; convergence of cloud and network; computing power network

Cite as: Xiongyan Tang, Chang Cao, Youxiang Wang, Shuai Zhang, Ying Liu, Mingxuan Li, Tao He"Computing Power Network:The Architecture of Convergence of Computing and Networking towards 6G Requirement"[J]China Communications,vol.18,no.2,pp.175-185,2021

Multi-Person Device-Free Gesture Recognition Using mmWave Signals

Keywords: device-free; gesture recognition; wireless sensing; multi-person; deep-learning

Cite as: Wang Jie, Ran Zhouhua, Gao Qinghua, Ma Xiaorui, Pan Miao, Xue Kaiping"Multi-Person Device-Free Gesture Recognition Using mmWave Signals"[J]China Communications,vol.18,no.2,pp.186-199,2021

MEC-Assisted Flexible Transcoding Strategy for Video Streaming in Small Cell Networks

Keywords: mobile edge computing; adaptive bitrate video streaming; flexible transcoding strategy; ADMM

Cite as: Chunyu Liu, Heli Zhang, Hong Ji, Xi Li"MEC-Assisted Flexible Transcoding Strategy for Video Streaming in Small Cell Networks"[J]China Communications,vol.18,no.2,pp.200-214,2021

Power Allocation for Video Segment Based Caching Strategy in F-RAN Architecture

Keywords: radio access networks; streaming media; quality of service; machine learning

Cite as: Zeyu Hu, Chunjing Hu, Zexu Li, Yong Li, Guiming Wei"Power Allocation for Video Segment Based Caching Strategy in F-RAN Architecture"[J]China Communications,vol.18,no.2,pp.215-227,2021

Cross-ice acoustic communication: cascade acoustic channel model and experimental results

Keywords: cross-ice acoustic communication; normal mode; CAC model; transmission coefficient

Cite as: Jingwei Yin, Wei Men, Guangping Zhu, Xiao Han"Cross-ice acoustic communication: cascade acoustic channel model and experimental results"[J]China Communications,vol.18,no.2,pp.228-240,2021

Potential Transmission Choice for Internet of Things (IoT):Wireless and Batteryless Communications and Open Problems

Keywords: batteryless backscatter; battery-free; channel state information (CSI); channel estimation; multiple antennas; signal detection; symbiotic communication

Cite as: Zhan Xu, Guanjie Hu, Minzheng Jia, Lan Dong"Potential Transmission Choice for Internet of Things (IoT):Wireless and Batteryless Communications and Open Problems"[J]China Communications,vol.18,no.2,pp.241-249,2021

Flex Ethernet Technology and Application in 5G Mobile Transport Network

Keywords: Flex Ethernet (FlexE); 5G; mobile transport network; network slicing

Cite as: Meng Zhang"Flex Ethernet Technology and Application in 5G Mobile Transport Network"[J]China Communications,vol.18,no.2,pp.250-258,2021

Intelligent Fast Cell Association Scheme Based on Deep Q-Learning in Ultra-Dense Cellular Networks

Keywords: ultra-dense cellular networks (UDCN); cell association (CA); deep Q-learning; proportional fairness; Q-learning

Cite as: Jinhua Pan, Lusheng Wang, Hai Lin, Zhiheng Zha, Caihong Kai"Intelligent Fast Cell Association Scheme Based on Deep Q-Learning in Ultra-Dense Cellular Networks"[J]China Communications,vol.18,no.2,pp.259-270,2021

Proactive Load Balancing Mechanism for Fog Computing Supported by Parked Vehicles in IoV-SDN

Keywords: IoV; parked vehicles; SDN; fog computing; load balancing

Cite as: Ahmed Jawad Kadhim, Jaber Ibrahim Naser"Proactive Load Balancing Mechanism for Fog Computing Supported by Parked Vehicles in IoV-SDN"[J]China Communications,vol.18,no.2,pp.271-289,2021

March

Click to read：China Communications Vol.18, No.3 2021

Performance Analysis for Large Intelligent Surface Assisted Vehicular Networks

Keywords: large intelligent surface; outage probability; ergodic achievable rate; vehicular network; Weibull fading

Cite as: Yiyang Ni, Yaxuan Liu, Jin Zhou, Qin Wang, Haitao Zhao, Hongbo Zhu"Performance Analysis for Large Intelligent Surface Assisted Vehicular Networks"[J]China Communications,vol.18,no.3,pp.1-17,2021

Passive Beamforming Design for Intelligent Reflecting Surface Assisted MIMO Systems

Keywords: intelligent reflecting surface; MIMO systems; passive beamforming

Cite as: Chenghao Feng; Wenqian Shen; Xinyu Gao; Jianping An"Passive Beamforming Design for Intelligent Reflecting Surface Assisted MIMO Systems"[J]China Communications,vol.18,no.3,pp.18-28,2021

Channel Estimation for Reconfigurable Intelligent Surface Assisted Wireless Communication Systems in Mobility Scenarios

Keywords: reconfigurable intelligent surface (RIS); channel estimation; time-variant channel; kalman filter

Cite as: Zhendong Mao, Mugen Peng, Xiqing Liu"Channel Estimation for Reconfigurable Intelligent Surface Assisted Wireless Communication Systems in Mobility Scenarios"[J]China Communications,vol.18,no.3,pp.29-38,2021

Secure Multigroup Multicast Communication Systems via Intelligent Reflecting Surface

Keywords: intelligent reflecting surface; multigroup multicast; transmit beamformer; secrecy rate; phase shifts

Cite as: Weiping Shi, Jiayu Li, Guiyang Xia, Yuntian Wang, Xiaobo Zhou, Yonghui Zhang, Feng Shu"Secure Multigroup Multicast Communication Systems via Intelligent Reflecting Surface"[J]China Communications,vol.18,no.3,pp.39-51,2021

Secrecy Rate Analysis for Reconfigurable Intelligent Surface-Assisted MIMO Communications with Statistical CSI

Keywords: reconfigurable intelligent surface; ergodic secrecy rate; statistical CSI; alternating optimization algorithm

Cite as: Jie Liu, Jun Zhang, Qi Zhang, JueWang, Xinghua Sun"Secrecy Rate Analysis for Reconfigurable Intelligent Surface-Assisted MIMO Communications with Statistical CSI"[J]China Communications,vol.18,no.3,pp.52-62,2021

Joint Beamforming Optimization for Reconfigurable Intelligent Surface-Enabled Downlink OFDM Systems

Keywords: reconfigurable intelligent surface (RIS); OFDM; joint beamforming optimization; fractional programming; majorization-minimization; manifold optimization

Cite as: Keming Feng, Xiao Li, Yu Han, Yijian Chen"Joint Beamforming Optimization for Reconfigurable Intelligent Surface-Enabled Downlink OFDM Systems "[J]China Communications,vol.18,no.3,pp.63-79,2021

RIS-Aided Constant-Envelope Beamforming for Multiuser Wireless Power Transfer: A Max-min Approach

Keywords: reconfigurable intelligent surface; wireless power transfer; max-min fairness; constantenvelope beamforming

Cite as: Huiyuan Yang, Chang Cai, Xiaojun Yuan, Yingchang Liang"RIS-Aided Constant-Envelope Beamforming for Multiuser Wireless Power Transfer: A Max-min Approach"[J]China Communications,vol.18,no.3,pp.80-90,2021

Multi-Source Spinal Coding for Coded Caching Multicast Transmissions in Wireless Networks

Keywords: coded caching; spinal code; network coding; multicast transmission; wireless networks

Cite as: Aimin Tang; Xudong Wang"Multi-Source Spinal Coding for Coded Caching Multicast Transmissions in Wireless Networks"[J]China Communications,vol.18,no.3,pp.91-104,2021

APPLSS: Adaptive Privacy Preserved Location Sharing Scheme based on Attribute based Encryption

Keywords: location-based service; location privacy; attribute-based encryption

Cite as: Yiliang Han, Shuaishuai Zhu, Yu Li, Xi Lin"APPLSS: Adaptive Privacy Preserved Location Sharing Scheme based on Attribute based Encryption"[J]China Communications,vol.18,no.3,pp.105-121,2021

Improving the Covertness in the Physical-Layer Authentication

Keywords: physical-layer; authentication; encoding; covertness; superimposing angle; security

Cite as: Ning Xie, Tianxing Hu"Improving the Covertness in the Physical-Layer Authentication"[J]China Communications,vol.18,no.3,pp.122-131,2021

Energy-Efficient Resource Allocation for Heterogeneous Network with Grouping D2D

Keywords: energy efficiency; resource allocation; heterogeneous network; grouping D2D

Cite as: Jing Cao, Xin Song, Siyang Xu, Zhigang Xie, Yanbo Xue"Energy-Efficient Resource Allocation for Heterogeneous Network with Grouping D2D"[J]China Communications,vol.18,no.3,pp.132-141,2021

Learning to Optimize for Resource Allocation in LTE-U Networks

Keywords: deep learning; resource allocation; LTE-U networks; Wi-Fi system
Cite as: Guanhua Chai, Weihua Wu, Qinghai Yang, Runzi Liu, Kyung Sup Kwak"Learning to Optimize for Resource Allocation in LTE-U Networks"[J]China Communications,vol.18,no.3,pp.142-154,2021

Adaptive Secure Transmission for Wireless Powered Communication Networks

Keywords: physical layer security; energy harvesting; markov chain; transmit antenna selection; differential spatial modulation
Cite as: Yong Wang, Weiwei Yang, Tao Zhang, Yong Chen, Xiaohui Shang, Quan Wang"Adaptive Secure Transmission for Wireless Powered Communication Networks"[J]China Communications,vol.18,no.3,pp.155-173,2021

GPS Spoofing Attack Detection in Smart Grids Based on Improved CapsNet

Keywords: smart grid; detection method; improved capsule neural network; phasor measurement units; global positioning system; spoofing attack
Cite as: Yuancheng Li, Shanshan Yang"GPS Spoofing Attack Detection in Smart Grids Based on Improved CapsNet"[J]China Communications,vol.18,no.3,pp.174-186,2021

Graph Laplacian Matrix Learning from Smooth Time-Vertex Signal

Keywords: Cartesian product graph; discrete secondorder difference operator; Gaussian prior distribution; graph Laplacian matrix learning; spatiotemporal smoothness; time-vertex signal
Cite as: Ran Li, Junyi Wang, Wenjun Xu, Jiming Lin, Hongbing Qiu;"Graph Laplacian Matrix Learning from Smooth Time-Vertex Signal"[J]China Communications,vol.18,no.3,pp.187-204,2021

WiFi CSI gesture recognition based on parallel LSTM-FCN deep space-time neural network

Keywords: signal and information processing; parallel LSTM-FCN neural network; deep learning; gesture recognition; wireless channel state information
Cite as: Zhiling Tang, Qianqian Liu, Minjie Wu, Wenjing Chen, Jingwen Huang, Simin Li "WiFi CSI gesture recognition based on parallel LSTM-FCN deep space-time neural network"[J]China Communications,vol.18,no.3,pp.205-215,2021

Inter-carrier Interference-aware Sparse Time-varying Underwater Acoustic Channel Estimation Based on Fast Reconstruction Algorithm

Keywords: underwater acoustic communication; OFDM; sparse channel estimation; OIP-FOMP

Cite as: Zhengqiang Yan, Xinghai Yang, Lijun Sun, Jingjing Wang"Inter-carrier Interference-aware Sparse Time-varying Underwater Acoustic Channel Estimation Based on Fast Reconstruction Algorithm"[J]China Communications,vol.18,no.3,pp.216-225,2021

Integrated Route Planning and Resource Allocation for Connected Vehicles

Keywords: connected vehicles; edge computing; resource allocation; route planning

Cite as: Quan Yuan, Bo Chen, Guiyang Luo, Jinglin Li, Fangchun Yang"Integrated Route Planning and Resource Allocation for Connected Vehicles"[J]China Communications,vol.18,no.3,pp.226-239,2021

Resource Allocation for Massive Machine Type Communications in the Finite Blocklength Regime

Keywords: resource allocation; machine type communications; finite blocklength

Cite as: Baoquan Yu, Dan Wu, Yueming Cai, Yan Wu, Zhongwu Xiang"Resource Allocation for Massive Machine Type Communications in the Finite Blocklength Regime"[J]China Communications,vol.18,no.3,pp.240-250,2021

Intelligent task offloading and collaborative computation over D2D communications

Keywords: utility maximization; lyapunov optimization; task offloading; mobile edge computing

Cite as: Cuili Jiang, Tengfei Cao, Jianfeng Guan "Intelligent task offloading and collaborative computation over D2D communications"[J]China Communications,vol.18,no.3,pp.251-263,2021

April

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A Robust UWB Array Localization Scheme through Passive Anchor Assistance

Keywords: ultra-wideband localization; NLOS environments; passive listening; adaptive unscented Kalman filter (UKF)

Cite as: Haipeng Lu, Tianyu Wang, Feng Ge, Yuan Shen"A Robust UWB Array Localization Scheme through Passive Anchor Assistance"[J]China Communications,vol.18,no.4,pp.1-13,2020

Generalized Parallel Coprime Array for Two-dimensional DOA Estimation: A Perspective from Maximizing Degree of Freedom

Keywords: direction of arrival estimation; generalized parallel coprime array; degrees of freedom; array aperture; coprime factors

Cite as: Luo Chen, Xinping Lin, Beizuo Zhu, Xiaofei Zhang"Generalized Parallel Coprime Array for Two-dimensional DOA Estimation: A Perspective from Maximizing Degree of Freedom"[J]China Communications,vol.18,no.4,pp.14-26,2021

A Topological Evolution Model Based on the Attraction of the Motif Vertex

Keywords: complex network; topological evolution model; network motif

Cite as: Xing Li, Shuxin Liu, Yuhang Zhu, Yingle Li"A Topological Evolution Model Based on the Attraction of the Motif Vertex"[J]China Communications,vol.18,no.4,pp.27-39,2021

DFF-EDR: An Indoor Fingerprint Location Technology Using Dynamic Fusion Features of Channel State Information and Improved Edit Distance on Real Sequence

Keywords: channel state information; indoor positioning; edit distance on real sequence; dynamic parameters; feature resolution

Cite as: Ke Han, Yunfei Xu, Zhongliang Deng, Jiawei Fu"DFF-EDR: An Indoor Fingerprint Location Technology Using Dynamic Fusion Features of Channel State Information and Improved Edit Distance on Real Sequence"[J]China Communications,vol.18,no.4,pp.40-63,2021

Antenna Selection in Energy Harvesting Relaying Networks using Q-learning Algorithm

Keywords: Q-learning; optimal PS factor; outage probability; ergodic capacity; antenna selection

Cite as: Daliang Ouyang, Rui Zhao, Yuanjian Li, Rongxin Guo, Yi Wang "Antenna Selection in Energy Harvesting Relaying Networks using Q-learning Algorithm"[J]China Communications,vol.18,no.4,pp.64-75,2021

Program Error Mitigation in MLC NAND Flash Memory with Soft Decision Decoders

Keywords: program errors; soft-decision decoder; NAND flash memory; clipping approximation

Cite as: Zequn Fang, Zheng Ma, Xiaohu Tang, Yue Xiao, Youhua Tang；"Program Error Mitigation in MLC NAND Flash Memory with Soft Decision Decoders"[J]China Communications,vol.18,no.4,pp.76-87,2021

M-BCJR Algorithm with Channel Shortening based on Ungerboeck Observation Model for Faster-than-Nyquist Signaling

Keywords: M-BCJR; Ungerboeck model; channel shortening; FTN; reduced-complexity; turbo equalization

Cite as: Hui Che, Yong Bai "M-BCJR Algorithm with Channel Shortening based on Ungerboeck Observation Model for Faster-than-Nyquist Signaling"[J]China Communications,vol.18,no.4,pp.88-98,2021

Analysis and application of endogenous wireless security principle for key generation

Keywords: endogenous wireless security; one-time pad; physical layer security; secret keys generation

Cite as: Xu Wang, Liang Jin, Yangming Lou, Xiaoming Xu "Analysis and application of endogenous wireless security principle for key generation""[J]China Communications,vol.18,no.4,pp.99-114,2021"

Secure and Efficient Computing Resource Management in Blockchain-Based Vehicular Fog Computing

Keywords: blockchain; vehicular fog computing; resource management; contract theory

Cite as: Ming Kong, Junhui Zhao, Xiaoke Sun, Yiwen Nie"Secure and Efficient Computing Resource Management in Blockchain-Based Vehicular Fog Computing"[J]China Communications,vol.18,no.4,pp.115-125,2021

Guarding Legal Communication with Smart Jammer: Stackelberg Game based Power Control Analysis

Keywords: power control; jamming communication systems; Stackelberg game

Cite as: Zhe Su, Nan Qi, Yongjie Yan, Zhiyong Du, Jiaxin Chen, Zhibin Feng, Qihui Wu"Guarding Legal Communication with Smart Jammer: Stackelberg Game based Power Control Analysis"[J]China Communications,vol.18,no.4,pp.126-136,2021

Shortest Link Scheduling in Wireless Networks with Oblivious Power Control

Keywords: link scheduling; SINR; Rayleigh fading; wireless networks; wireless communications

Cite as: Chunmei Ma, Jiguo Yu, Baogui Huang, Yu Meng"Shortest Link Scheduling in Wireless Networks with Oblivious Power Control"[J]China Communications,vol.18,no.4,pp.137-152,2021

A Proactive Selection Method for Dynamic Access Points Grouping in User-centric UDN

Keywords: proactive selection; user-centric; ultradense network; stochastic geometry model

Cite as: Bo HU, Fangxia ZUO, Chuan'an WANG, Shanzhi CHEN"A Proactive Selection Method for Dynamic Access Points Grouping in User-centric UDN"[J]China Communications,vol.18,no.4,pp.153-165,2021

Energy-Efficient Power Allocation for IoT Devices in CR-NOMA Networks

Keywords: cognitive radio-non-orthogonal multiple access (CR-NOMA); power allocation; energy efficiency; internet of things (IoT)

Cite as: Guangfu Wu,Wenyi Zheng,Yun Li,Mengyuan Zhou"Energy-Efficient Power Allocation for IoT Devices in CR-NOMA Networks"[J]China Communications,vol.18,no.4,pp.166-181,2021

Precoder Design and Impulsive Noise Mitigation Scheme for Industrial Wireless Communications

Keywords: Industrial wireless communications; precoder design; impulsive noise mitigation

Cite as: Yanjing Sun, Xinyan Li, Jiasi Zhou, Ruirui Chen, Bowen Wang, Yanfen Wang"Precoder Design and Impulsive Noise Mitigation Scheme for Industrial Wireless Communications"[J]China Communications,vol.18,no.4,pp.182-197,2021

Closer: Scalable Load Balancing Mechanism for Cloud Datacenters

Keywords: cloud datacenters; load balancing; programmable network; INT; overlay network

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A New Solution based on Optimal Link-State Routing for Named Data MANET

Keywords: named-data networking; NLSR;MANET;OLSR

Cite as: Xian Guo, Shengya Yang, Laicheng Cao, Jing Wang, Yongbo Jiang"A New Solution based on Optimal Link-State Routing for Named Data MANET"[J]China Communications,vol.18,no.4,pp.213-229,2021

NOMA-Based UAV Communications for Maritime Coverage Enhancement

Keywords: large-scale channel state information (CSI); maritime communications; non-orthogonal multiple access (NOMA); unmanned aerial vehicle (UAV)

Cite as: Rui Tang, Wei Feng, Yunfei Chen, Ning Ge"NOMA-Based UAV Communications for Maritime Coverage Enhancement"[J]China Communications,vol.18,no.4,pp.230-243,2021

May

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Towards 6G: Paradigm of Realistic Terahertz Channel Modeling (Invited Paper)

Keywords: channel modeling; channel sounding; raytracing;THz communication; 6G.

Cite as: Ke Guan,Haofan Yi, Danping He, Bo Ai, Zhangdui Zhong"Towards 6G: Paradigm of Realistic Terahertz Channel Modeling (Invited Paper)"[J]China Communications,vol.18,no.5,pp.1-18,2021

Channel measurement and path loss modeling from 220 GHz to 330 GHz for 6G wireless communications

Keywords: terahertz; channel measurement; channel modeling; path loss

Cite as: Pan Tang, Jianhua Zhang, Haoyu Tian, Zhaowei Chang, Jun Men, Yuxiang Zhang, Lei Tian, Liang Xia, Qixing Wang, Jingsuo He"Channel measurement and path loss modeling from 220 GHz to 330 GHz for 6G wireless communications"[J]China Communications,vol.18,no.5,pp.19-32,2021

THz Channel Modeling: Consolidating the Road to THz Communications

Keywords: terahertz (THz); channel modeling; survey; sixth-generation (6G); molecular absorption loss; misalignment fading; multipath fading

Cite as: Shanyun Liu, Xianbin Yu, Rongbin Guo, Yajie Tang, Zhifeng Zhao"THz Channel Modeling: Consolidating the Road to THz Communications"[J]China Communications,vol.18,no.5,pp.33-49,2021

A 3-D Hybrid Dynamic Channel Model for Indoor THz Communications

Keywords: terahertz (THz) communications; indoor channel; molecular absorption; diffuse scattering; non-stationarity

Cite as: Yan Zhang, Lei Zhao, Zunwen He"A 3-D Hybrid Dynamic Channel Model for Indoor THz Communications"[J]China Communications,vol.18,no.5,pp.50-65,2021

Wideband Channel Estimation for THz Massive MIMO

Keywords: THz communication; massive MIMO; hybrid precoding; beam split; wideband channel estimation

Cite as: Jingbo Tan, Linglong Dai"Wideband Channel Estimation for THz Massive MIMO"[J]China Communications,vol.18,no.5,pp.66-80,2021

Hybrid Precoding for Cluster-Based Multi-Carrier Beam Division Multiple Access in Terahertz Wireless Communications

Keywords: terahertz wireless communications; multicarrier hybrid precoding; power leakage suppression

Cite as: Hang Yuan, Xiang Wang, Kai Yang, Jianping An"Hybrid Precoding for Cluster-Based Multi-Carrier Beam Division Multiple Access in Terahertz Wireless Communications"[J]China Communications,vol.18,no.5,pp.81-92,2021

Towards Intelligent Reflecting Surface Empowered 6G Terahertz Communications: A Survey

Keywords: terahertz (THz) communications; intelligent reflecting surface (IRS); sixth generation (6G); application scenarios; enabling technologies; emerging challenges

Cite as: Zhen Chen, Xinying Ma, Chong Han, Qiye Wen."Towards Intelligent Reflecting Surface Empowered 6G Terahertz Communications: A Survey"[J]China Communications,vol.18,no.5,pp.93-119,2021

Coverage and Area Spectral Efficiency Analysis of Dense Terahertz Networks in Finite Region

Keywords: terahertz; interference; area spectral efficiency; densification; stochastic geometry

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Terahertz orbital angular momentum: generation, detection and communication

Keywords: terahertz vortex beam; orbital angular momentum; terahertz generation; terahertz detection

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Terahertz Band: Lighting up Next-Generation Wireless Communications

Keywords: terahertz communication; 6th-generation; terahertz photonics; terahertz transceivers; terahertz waves

Cite as: Hongqi Zhang, Lu Zhang, Xianbin Yu"Terahertz Band: Lighting up Next-Generation Wireless Communications"[J]China Communications,vol.18,no.5,pp.153-174,2021

A Review on Applications of Integrated Terahertz Systems

Keywords: terahertz; integrated circuit; imaging; communication; spectroscopy; on-chip antenna; CMOS; wireless transceivers; phased array; MIMO

Cite as: Xuyang Lu Suresh Venkatesh Hooman Saeidi"A Review on Applications of Integrated Terahertz Systems"[J]China Communications,vol.18,no.5,pp.175-201,2021

A semi-blind method to estimate the I/Q imbalanc of THz orthogonal modulator

Keywords: terahertz communication; quadrature modulator; I/Q imbalance correction; digital signal processing

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A 20.8-Gbps Dual-Carrier Wireless Communication Link in 220-GHz Band

Keywords: communication systems; millimeter-wave communication; quadrature amplitude modulation (QAM); state circuits

Cite as: Yinian Feng, Bo Zhang, Ke Liu, Weilong Liu, Fang Shen, Chuanqi Qiao, Jicong Zhang, Yong Fan, Xiaobo Yang"A 20.8-Gbps Dual-Carrier Wireless Communication Link in 220-GHz Band"[J]China Communications,vol.18,no.5,pp.210-220,2021

Terahertz Direct Modulation Techniques for High Speed Communication System

Keywords: THz communication, THz direct modulation, HEMT, switches, diode, QCL, new-material

Cite as: Tianchi Zhou, Yaxin Zhang, Bo Zhang, Hongxin Zeng, Zhiyong Tan, Xilin Zhang, Lan Wang, Zhi Chen, Juncheng Cao, Kaijun Song, Ziqiang Yang"Terahertz Direct Modulation Techniques for High Speed Communication System"[J]China Communications,vol.18,no.5,pp.221-244,2021

A Wideband E-plane Crossover Coupler for Terahertz Applications

Keywords: butler matrix; crossover coupler; high isolation; multi-beam; THz

Cite as: Xiaohe Cheng, Zhiyan Liu, Yuan Yao, Junsheng Yu, Xiaodong Chen"A Wideband E-plane Crossover Coupler for Terahertz Applications"[J]China Communications,vol.18,no.5,pp.245-254,2021

A 16-QAM 45-Gbps 7-m Wireless Link Using InP HEMT LNA and GaAs SBD Mixers at 220-GHz-Band

Keywords: wireless link; 16 quadrature amplitude modulation (16-QAM); super-heterodyne transceiver modules; sub-harmonic mixer (SHM)

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Adaptive Maxwell’s equations derived optimization and its application in antenna array synthesis

Keywords: electromagnetic compatibility; Maxwell’s equations derived optimization; adaptive Maxwell’s equations derived optimization; sequential modelbased optimization; antenna array synthesis

Cite as: Donglin Su, Lilin Li, Shunchuan Yang, Fei Wang"Adaptive Maxwell’s equations derived optimization and its application in antenna array synthesis"[J]China Communications,vol.18,no.5,pp.263-272,2021

Secrecy-Enhancing Design for Two-Way Energy Harvesting Cooperative Networks with Full-duplex Relay Jamming

Keywords: physical layer security; two-way EH cooperative networks; FD relay jamming; minimum guaranteed secrecy rate

Cite as: Siyang Xu, Xin Song, Yiming Gai, Suyuan Li, Jing Cao, Zhigang Xie"Secrecy-Enhancing Design for Two-Way Energy Harvesting Cooperative Networks with Full-duplex Relay Jamming"[J]China Communications,vol.18,no.5,pp.273-284,2021

AI Assisted PHY in Future Wireless Systems: Recent Developments and Challenges

Keywords: artificial intelligence, wireless communications, physical layer

Cite as: Wei Chen, Ruisi He, Gongpu Wang, Jiayi zhang, Fanggang Wang, Ke Xiong, Bo Ai, Zhangdui Zhong "AI Assisted PHY in Future Wireless Systems: Recent Developments and Challenges"[J]China Communications,vol.18,no.5,pp.285-297,2021

June

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MARVEL: Multi-Agent Reinforcement Learning for VANET Delay Minimization

Keywords: VANET; multi-agent RL; delay minimization; routing algorithm

Cite as: Chengyue Lu, Zihan Wang, Wenbo Ding, Gang Li, Sicong Liu, Ling Cheng"MARVEL: Multi-Agent Reinforcement Learning for VANET Delay Minimization"[J]China Communications,vol.18,no.6,pp.1-11,2021

Q-greedyUCB: a New Exploration Policy to Learn Resource-efficient Scheduling

Keywords: reinforcement learning for average rewards; infinite-horizon Markov decision process; upper confidence bound; queue scheduling

Cite as: Yu Zhao; Joohyun Lee; Wei Chen."Q-greedyUCB: a New Exploration Policy to Learn Resource-efficient Scheduling"[J]China Communications,vol.18,no.6,pp.12-23,2021

On Latency Reductions in Vehicle-to-Vehicle Networks by Random Linear Network Coding

Keywords: random linear network coding; Vehicle-to-Vehicle; Markov process; Time-critical

Cite as: Tiantian Zhu, Congduan Li, Yanqun Tang, Zhiyong Luo"On Latency Reductions in Vehicle-to-Vehicle Networks by Random Linear Network Coding"[J]China Communications,vol.18,no.6,pp.24-38,2021

Edge Computing-Based Joint Client Selection and Networking Scheme for Federated Learning in Vehicular IoT

Keywords: vehicular IoT; federated learning; client selection; networking scheme

Cite as: Wugedele Bao, Celimuge Wu, Siri Guleng, Jiefang Zhang, Kok-Lim Alvin Yau, and Yusheng Ji,"Edge Computing-Based Joint Client Selection and Networking Scheme for Federated Learning in Vehicular IoT"[J]China Communications,vol.18,no.6,pp.39-52,2021

Multi-Vehicle Cooperative Positioning Based on Edge-Computed Multidimensional Scaling

Keywords: intelligent transportation systems (ITS); Internet of vehicles (IoV); multidimensional scaling (MDS); positioning; Procrustes analysis

Cite as: Bin Yang, Rui Chen, Bin Li, Changle Li"Multi-Vehicle Cooperative Positioning Based on Edge-Computed Multidimensional Scaling"[J]China Communications,vol.18,no.6,pp.53-63,2021

Joint Allocation of Wireless Resource and Computing Capability in MEC-enabled Vehicular Network

Keywords: vehicular network; delay optimization; wireless resource allocation; matrix spectral radius; MEC computation resource allocation

Cite as: Hou Yanzhao, Wang Chengrui, Zhu Min, Xu Xiaodong, Tao Xiaofeng"Joint Allocation of Wireless Resource and Computing Capability in MEC-enabled Vehicular Network"[J]China Communications,vol.18,no.6,pp.64-76,2021

A Network-Level Connected Autonomous Driving Evaluation Platform Implementing C-V2X Technology

Keywords: performance evaluation; LTE-V2X; SUMO; CARLA; multi-intersection; remote driving

Cite as: Siyu Fu, Wei Zhang, Zhiyuan Jiang"A Network-Level Connected Autonomous Driving Evaluation Platform Implementing C-V2X Technology"[J]China Communications,vol.18,no.6,pp.77-88,2021

A Real-Time Multi-Vehicle Tracking Framework in Intelligent Vehicular Networks

Keywords: multiple object tracking; vehicle detection; vehicle re-identification; single object tracking; machine learning

Cite as: Huiyuan Fu, Jun Guan, Feng Jing, Chuanming Wang, Huadong Ma"A Real-Time Multi-Vehicle Tracking Framework in Intelligent Vehicular Networks"[J]China Communications,vol.18,no.6,pp.89-99,2021

Sample-Efficient Deep Reinforcement Learning with Directed Associative Graph

Keywords: directed associative graph; sample efficiency; deep reinforcement learning

Cite as: Dujia Yang, Xiaowei Qin, Xiaodong Xu, Chensheng Li, Guo Wei"Sample-Efficient Deep Reinforcement Learning with Directed Associative Graph"[J]China Communications,vol.18,no.6,pp.100-113,2021

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Keywords: network virtualization; virtual network embedding; global topology attribute; node ranking

Cite as: Shengchen Wu ,Hao Yin , Haotong Cao, Longxiang Yang, Hongbo Zhu"Node Ranking Strategy in Virtual Network Embedding: An Overview""[J]China Communications,vol.18,no.6,pp.114-136,2021"

Capacity and Spatial Correlation Measurements of Compact MIMO Antennas

Keywords: compact MIMO antenna; channel capacity; spatial correlation; measurement

Cite as: Dazhi Piao, Meng Wang, Jie Zuo, Hao Zhou"Capacity and Spatial Correlation Measurements of Compact MIMO Antennas "[J]China Communications,vol.18,no.6,pp.137-145,2021

Spectral Efficiency of Superimposed Pilots in Cell-Free Massive MIMO Systems with Hardware Impairments

Keywords: cell-free massive MIMO; hardware impairments; superimposed pilots; spectral efficiency

Cite as: Yao Zhang, Meng Zhou, Haitao Zhao, Longxiang Yang, and Hongbo Zhu"Spectral Efficiency of Superimposed Pilots in Cell-Free Massive MIMO Systems with Hardware Impairments"[J]China Communications,vol.18,no.6,pp.146-161,2021

Sparsity-Aware Channel Estimation for mmWave Massive MIMO: A Deep CNN-Based Approach

Keywords: deep convolutional neural networks; deep learning; sparse channel estimation; mmWave massive MIMO

Cite as: Sicong Liu, Xiao Huang"Sparsity-Aware Channel Estimation for mmWave Massive MIMO: A Deep CNN-Based Approach"[J]China Communications,vol.18,no.6,pp.162-171,2021

A Blockchain-Based Credible and Secure Education Experience Data Management Scheme Supporting for Searchable Encryption

Keywords: blockchain, big data, data transmission; smart contract; searchable encryption

Cite as: Zihan Li, Zhaofeng Ma"A Blockchain-Based Credible and Secure Education Experience Data Management Scheme Supporting for Searchable Encryption"[J]China Communications,vol.18,no.6,pp.172-183,2021

Joint 3D Trajectory and Resource Optimization for A UAV Relay-Assisted Cognitive Radio Network

Keywords: cognitive radio; UAV communication; 3D trajectory design; mobile relaying; power allocation

Cite as: Zhen Wang, Fuhui Zhou, Yuhao Wang, Qihui Wu"Joint 3D Trajectory and Resource Optimization for A UAV Relay-Assisted Cognitive Radio Network"[J]China Communications,vol.18,no.6,pp.184-200,2021

LED adaptive deployment optimization in indoor VLC networks

Keywords: visible light communication; lightemitting diodes; centroidal Voronoi tessellation; quality of experience; optimal deployment

Cite as: Jiangtao Li, Xu Bao, Wence Zhang"LED adaptive deployment optimization in indoor VLC networks"[J]China Communications,vol.18,no.6,pp.201-213,2021

Bit-Level Composite Signal Design for Simultaneous Ranging and Communication

Keywords: composite signal; spectrum sharing; lowweight codeword; regenerative PN ranging code

Cite as: Weigang Chen, Yalong He, Changcai Han, Jinsheng Yang, Zhan Xu"Bit-Level Composite Signal Design for Simultaneous Ranging and Communication"[J]China Communications,vol.18,no.6,pp.214-227,2021

Boosting Unsupervised Monocular Depth Estimation with Auxiliary Semantic Information

Keywords: unsupervised monocular depth estimation; semantic segmentation; multi-task model

Cite as: Hui Ren; Nan Gao;Jia Li"Boosting Unsupervised Monocular Depth Estimation with Auxiliary Semantic Information"[J]China Communications,vol.18,no.6,pp.228-243,2021

Reinforcement Learning-Based Sensitive Semantic Location Privacy Protection for VANETs

Keywords: semantic location; sensitivity; locationbased services; VANET; differential privacy; reinforcement learning

Cite as: Minghui Min, Weihang Wang, Liang Xiao, Yilin Xiao, Zhu Han"Reinforcement Learning-Based Sensitive Semantic Location Privacy Protection for VANETs"[J]China Communications,vol.18,no.6,pp.244-260,2021

July

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V2I based environment perception for autonomous vehicles at intersections

Keywords: V2I; environmental perception; autonomous vehicles; 3D objects detection

Cite as: Xuting Duan, Hang Jiang, Daxin Tian, Tianyuan Zou, Jianshan Zhou, Yue Cao"V2I based environment perception for autonomous vehicles at intersections"[J]China Communications,vol.18,no.7,pp.1-12,2021

Machine Learning-Based Radio Access Technology Selection in the Internet of Moving Things

Keywords: internet of moving things; multi-RAT; CITS; classification; personal mobility

Cite as: Ramon Sanchez-Iborra, Luis Bernal-Escobedo, Jose Santa"Machine Learning-Based Radio Access Technology Selection in the Internet of Moving Things"[J]China Communications,vol.18,no.7,pp.13-24,2021

A Joint Power and Bandwidth Allocation Method based on Deep Reinforcement Learning for V2V Communications Network in 5G

Keywords: 5G; V2V communication; power allocation; bandwidth allocation; deep reinforcement learning

Cite as: Xin Hu, Sujie Xu, Libing Wang, Yin Wang, Zhijun Liu, Lexi Xu, You Li, Weidong Wang"A Joint Power and Bandwidth Allocation Method based on Deep Reinforcement Learning for V2V Communications Network in 5G"[J]China Communications,vol.18,no.7,pp.25-35,2021

CSI Intelligent Feedback for Massive MIMO Systems in V2I Scenarios

Keywords: Internet of vehicles; high speed mobility; CSI feedback; deep learning; denoising

Cite as: Shiyi Wang, Yong Liao"CSI Intelligent Feedback for Massive MIMO Systems in V2I Scenarios"[J]China Communications,vol.18,no.7,pp.36-43,2021

Better Platooning Toward Autonomous Driving: Inter-Vehicle Communications with Directional Antenna

Keywords: vehicular IoT; inter-vehicle communications; directional antenna; platoon safety

Cite as: Xiaoyan Wang, Diquan Wang, Nobuhiro Ariyasu, Masahiro Umehira"Better Platooning Toward Autonomous Driving: Inter-Vehicle Communications with Directional Antenna"[J]China Communications,vol.18,no.7,pp.44-57,2021

Reinforcement Learning Based Dynamic Spectrum Access in Cognitive Internet of Vehicles

Keywords: cognitive Internet of vehicles; reinforcement learning; dynamic spectrum access; Q-learning; spectral efficiency

Cite as: Xin Liu, Can Sun, Mu Zhou, Bin Lin, Yuto Lim"Reinforcement Learning Based Dynamic Spectrum Access in Cognitive Internet of Vehicles"[J]China Communications,vol.18,no.7,pp.58-68,2021

MADCR: Mobility Aware Dynamic Cluster based Routing Protocol in Internet of Vehicles

Keywords: clustering protocol; Internet of things; Internet of vehicles; optimization algorithm; Mayfly algorithm

Cite as: Sankar Sennan, Somula Ramasubbareddy, Sathiyabhama Balasubramaniyam,Anand Nayyar, Chaker Abdelaziz Kerrache, Muhammad Bilal "MADCR: Mobility Aware Dynamic Cluster based Routing Protocol in Internet of Vehicles""[J]China Communications,vol.18,no.7,pp.69-85,2021"

CHRT: Clustering-based Hybrid Re-routing System for Traffic Congestion Avoidance

Keywords: traffic congestion; dynamic re-routing; intelligent transportation system (ITS); real-time traffic information; VANET

Cite as: Jie Huo, Xiangming Wen, Luning Liu, Luhan Wang, Meiling Li, Zhaoming Lu"CHRT: Clustering-based Hybrid Re-routing System for Traffic Congestion Avoidance"[J]China Communications,vol.18,no.7,pp.86-102,2021

A Novel Improved Artificial Bee Colony and Blockchain-Based Secure Clustering Routing Scheme for FANET

Keywords: improved artificial bee colony optimization; optimal cluster head selection; secure routing; blockchain; lightweight consensus protocol

Cite as: Liang Zhao, Muhammad Bin Saif, Ammar Hawbani, Geyong Min, Su Peng, Na Lin "A Novel Improved Artificial Bee Colony and Blockchain-Based Secure Clustering Routing Scheme for FANET"[J]China Communications,vol.18,no.7,pp.103-116,2021"

A Federated Bidirectional Connection Broad Learning Scheme for Secure Data Sharing in Internet of Vehicles

Keywords: federated learning; broad learning system; deep learning; Internet of Vehicles; data privacy

Cite as: Xiaoming Yuan, Jiahui Chen, Ning Zhang, Xiaojie Fang, Didi Liu"A Federated Bidirectional Connection Broad Learning Scheme for Secure Data Sharing in Internet of Vehicles"[J]China Communications,vol.18,no.7,pp.117-133,2021

Deep Reinforcement Learning-Based URLLC-Aware Task Offloading in Collaborative Vehicular Networks

Keywords: collaborative vehicular networks; task offloading; URLLC awareness; deep Q-learning

Cite as: Chao Pan, Zhao Wang, Zhenyu Zhou, Xincheng Ren"Deep Reinforcement Learning-Based URLLC-Aware Task Offloading in Collaborative Vehicular Networks"[J]China Communications,vol.18,no.7,pp.134-146,2021

Game Theoretical Secure Wireless Communication for UAV-assisted Vehicular Internet of Things

Keywords: UAV-assisted vehicular internet of things (UVIoTs); jammers; offensive and defensive game; wireless transmission

Cite as: Bo Liu, Zhou Su, Qichao Xu "Game Theoretical Secure Wireless Communication for UAV-assisted Vehicular Internet of Things"[J]China Communications,vol.18,no.7,pp.147-157,2021"

AIRIS: Artificial Intelligence Enhanced Signal Processing in Reconfigurable Intelligent Surface Communications

Keywords: reconfigurable intelligent surface; artificial intelligence; deep learning; deep reinforcement learning; signal processing
Cite as: Shun Zhang, Muye Li, Mengnan Jian, Yajun Zhao, Feifei Gao "AIRIS: Artificial Intelligence Enhanced Signal Processing in Reconfigurable Intelligent Surface Communications"[J]China Communications,vol.18,no.7,pp.158-171,2021

BER Analysis of NOMA with Max-Min Relay Selection

Keywords: NOMA; bit error rate; relay decoding error; imperfect SIC
Cite as: Meng Shen, Zihao Huang, Xianfu Lei, Lisheng Fan"BER Analysis of NOMA with Max-Min Relay Selection"[J]China Communications,vol.18,no.7,pp.172-182,2021

Deep Learning Based User Grouping for FD-MIMO Systems Exploiting Statistical Channel State Information

Keywords: deep learning; objective detection; YOLO; user grouping; massive MIMO; JSDM
Cite as: Shupeng Ji, Qisheng Wang, Shiyu Wu, Jiachen Tian, Xiao Li, Wenjin Wang"Deep Learning Based User Grouping for FD-MIMO Systems Exploiting Statistical Channel State Information"[J]China Communications,vol.18,no.7,pp.183-196,2021

Information-defined networks: a communication network approach for network studies

Keywords: network data analysis; label detection; complex network; communication network; network evolution
Cite as: Wenjie Jia, Tao Jiang "Information-defined networks: a communication network approach for network studies"[J]China Communications,vol.18,no.7,pp.197-210,2021"

CLORKE-SFS:Certificateless One-Round Key Exchange Protocol With Strong Forward Security in Limited Communication Scenarios

Keywords: key exchange protocol; strong forward security; one-round; certificateless
Cite as: Xiaowei Li;Dengqi Yang;Benhui Chen;Yuqing Zhang"CLORKE-SFS:Certificateless One-Round Key Exchange Protocol With Strong Forward Security in Limited Communication Scenarios"[J]China Communications,vol.18,no.7,pp.211-222,2021

AN INTELLIGENT SCHEME FOR SLOT RESERVATION IN VEHICULAR AD HOC NETWORKS

Keywords: channel switching; DSRC; IEEE 802.11p; ITS; MAC; safety; scheduling; VANET

Cite as: Surjeet , Priyanka Bhardwaj, Raghavendra Pal, Nishu Gupta"AN INTELLIGENT SCHEME FOR SLOT RESERVATION IN VEHICULAR AD HOC NETWORKS"[J]China Communications,vol.18,no.7,pp.223-235,2021

Joint Computing and Communication Resource Allocation for Satellite Communication Networks with Edge Computing

Keywords: satellite communication networks; edge computing; resource allocation; matching theory

Cite as: Shanghong Zhang, Gaofeng Cui, Yating Long, Weidong Wang "Joint Computing and Communication Resource Allocation for Satellite Communication Networks with Edge Computing"[J]China Communications,vol.18,no.7,pp.236-252,2021

Energy Model for UAV Communications: Experimental Validation and Model Generalization

Keywords: UAV communications; energy model; energy consumption; flight experiments; model generalization

Cite as: Ning Gao, Yong Zeng, Jian Wang, Di Wu, Chaoyue Zhang, Qingheng Song, Jachen Qian, Shi jin"Energy Model for UAV Communications: Experimental Validation and Model Generalization"[J]China Communications,vol.18,no.7,pp.253-264,2021

Joint Topology Construction and Power Adjustment for UAV Networks: A Deep Reinforcement Learning Based Approach

Keywords: UAV networks; target selection; power control; power allocation; deep reinforcement learning

Cite as: Wenjun Xu, Chunlei Huang, Jin Shang"Joint Topology Construction and Power Adjustment for UAV Networks: A Deep Reinforcement Learning Based Approach"[J]China Communications,vol.18,no.7,pp.265-283,2021

August

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SHFuzz: A Hybrid Fuzzing Method Assisted by Static Analysis for Binary Programs

Keywords: hybrid fuzzing; static analysis; concolic execution; binary programs

Cite as: "Wenjie Wang, Donghai Tian, Rui Ma, Hang Wei, Qianjin Ying, Xiaoqi Jia, Lei Zuo

""SHFuzz: A Hybrid Fuzzing Method Assisted by Static Analysis for Binary Programs""[J]China Communications,vol.18,no.8,pp.1-16,2021"

SecIngress: An API Gateway Framework to Secure Cloud Applications Based on N-variant System

Keywords: N-variant system; API gateway; cloud security; analytic hierarchy process

Cite as: Dacheng Zhou, Hongchang Chen, Guozhen Cheng, Weizhen He, Lingshu Li"SecIngress: An API Gateway Framework to Secure Cloud Applications Based on N-variant System"[J]China Communications,vol.18,no.8,pp.17-34,2021

Generative Trapdoors for Public Key Cryptography based on Automatic Entropy Optimization

Keywords: generative model; public key encryption; indistinguishability model; security model; deep learning

Cite as: Shuaishuai Zhu, Yiliang Han"Generative Trapdoors for Public Key Cryptography based on Automatic Entropy Optimization"[J]China Communications,vol.18,no.8,pp.35-46,2021

A Safe and Reliable Heterogeneous Controller Deployment Approach in SDN

Keywords: software defined networking; control plane; reliability; safety; controller deployment

Cite as: Peng Yi, Tao Hu, Yanze Qu, Liang Wang, Hailong Ma, Yuxiang Hu, Julong Lan"A Safe and Reliable Heterogeneous Controller Deployment Approach in SDN"[J]China Communications,vol.18,no.8,pp.47-61,2021

Distributed Asynchronous Learning for Multipath Data Transmission based on P-DDQN

Keywords: distributed asynchronous learning; multipath data transmission; deep reinforcement learning

Cite as: Kang Liu, Wei Quan, Deyun Gao, Chengxiao Yu, Mingyuan Liu, and Yuming Zhang"Distributed Asynchronous Learning for Multipath Data Transmission based on P-DDQN"[J]China Communications,vol.18,no.8,pp.62-74,2021

A Fast Physical Layer Security-Based Location Privacy Parameter Recommendation Algorithm in 5G IoT

Keywords: cross-layer authentication; location privacy parameter recommendation; 5G IoT

Cite as: Hua Zhao, Mingyan Xu, Zhou Zhong, Ding Wang"A Fast Physical Layer Security-Based Location Privacy Parameter Recommendation Algorithm in 5G IoT"[J]China Communications,vol.18,no.8,pp.75-84,2021

SecMVX: Analysis on the Vulnerability of Multi-Variant Execution

Keywords: multi-variant execution; software diversity; cyberspace security

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Keywords: network switching chip; active defense; hardware trojan; payload decoupling

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Keywords: distributed object storage system; mimic defense; data security

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Keywords: chips; integrated passive device (IPD); multifunctional; microwave circuit

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A SURVEY ON BELIEF PROPAGATION DECODING OF POLAR CODES

Keywords: polar codes; belief propagation; 5G

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Personalized Query Recommendation using Semantic Factor Model

Keywords: query recommendation; topic mining; text analysis; recommender system; LDA

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τ-Access Policy: Attribute-based encryption scheme for social network based data trading

Keywords: ABE; privacy; integrity; data trading; PTI; τ-access policy

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Single-Site Indoor Fingerprint Localization Based on MIMO-CSI

Keywords: electronics and communication engineering; indoor positioning; channel state information; neural network; PCA; WKNN

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Keywords: orthogonal time frequency space (OTFS); spatial modulation based OTFS (SM-OTFS); delay-Doppler domain; average symbol error rate (ASER); average bit error rate (ABER)

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QMCR: A Q-Learning-Based Multi-Hop Cooperative Routing Protocol for Underwater Acoustic Sensor Networks

Keywords: Q-learning algorithm; routing; internet of underwater things; underwater acoustic communication; multi-hop cooperative communication

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A Novel Robust Zero-Watermarking Algorithm for Audio Based on Sparse Representation

Keywords: zero-watermarking; K-singular value decomposition; dictionary learning; sparse representtion

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Achieving Energy Efficiency in Wireless Sensor Networks using Dynamic Channel Polling and Packet Concatenation

Keywords: energy efficiency; concatenation; dynamic; polling

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Keywords: multi-parameters estimation; log penalty; DC functions decomposition; partly calibrated COLD array; gain-phase errors

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Keywords: electric vehicles; billing data interaction; blockchain; mobile edge computing; reinforcement learning

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Keywords: C-V2X; identification management; authentication

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Keywords: 5G slicing technology; MMTC; AI

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Two-timescale Online Learning of Joint User Association and Resource Scheduling in Dynamic Mobile Edge Computing

Keywords: user association; resource scheduling; stochastic gradient descent; two-timescale optimization; mobile edge computing

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September

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On Connectivity of Flying Ad hoc Networks in the Presence of Ground Terminal

Keywords: flying ad hoc network; UAV swarm; connectivity; power control; connected probability

Cite as: Shanzhi Chen,Qiang Li,Yong Wang, Hui Xu,Xiaoyong Jia"On Connectivity of Flying Ad hoc Networks in the Presence of Ground Terminal"[J]China Communications,vol.18,no.9,pp.1-10,2021

Benefits Analysis of Beam Hopping in Satellite Mobile System with Unevenly Distributed Traffic

Keywords: satellite communication; space-air-ground integrated network; beam hopping;unevenly distributed traffic; performance analysis

Cite as: LILI TONG, CHEN ZHANG, RONGHUAI HUANG "Benefits Analysis of Beam Hopping in Satellite Mobile System with Unevenly Distributed Traffic"[J]China Communications,vol.18,no.9,pp.11-23,2021

Multi-Resources Management in 6G-oriented Terrestrial-Satellite Network

Keywords: downlink transmission; multi-resource management; relay; terrestrial-satellite networks; uplink transmission

Cite as: Jian Zhang, Qimei Cui, Xuefei Zhang, Xueqing Huang, Xiaofeng Tao"Multi-Resources Management in 6G-oriented Terrestrial-Satellite Network"[J]China Communications,vol.18,no.9,pp.24-36,2021"

Spectrum Sensing via Temporal Convolutional Network

Keywords: cognitive radio; spectrum sensing; deep learning; temporal convolutional network; satellite communication

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Keywords: high-throughput satellites; satelliteterrestrial networks; resource allocation; dynamic coverage on demand; beam hopping

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Radio-Acoustic Integrated Network for Ocean Information Transmission: Framework and Enabling Technologies

Keywords: integrated network; acoustic communication; network protocols; ocean engineering

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Keywords: UAV swarm; physical layer security; beamforming; bandwidth allocation; optimization

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Introduction to Wireless Endogenous Security and Safety: Problems, Attributes, Structures and Functions

Keywords: wireless communication; endogenous security; information security; functional safety

Cite as: Liang Jin, Xiaoyan Hu, Yangming Lou, Zhou Zhong, Xiaoli Sun, Huiming Wang, Jiangxing Wu"Introduction to Wireless Endogenous Security and Safety: Problems, Attributes, Structures and Functions"[J]China Communications,vol.18,no.9,pp.88-99,2021

Single-Channel Speech Enhancement Based on Improved Frame-Iterative Spectral Subtraction in the Modulation Domain

Keywords: short-time modulation domain; singlechannel speech enhancement; modulation improved frame iterative spectral subtraction; low SNRs

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Keywords: untrusted relay; physical layer security; secrecy outage probability; ergodic secrecy capacity; energy harvesting

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Keywords: massive MIMO; pilot contamination; pseudo-channel matrix; spatial correlation; superimposed pilots

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Keywords: virtual elastic optical network; virtual optical network embedding; spectrum assignment; spectrum trading; spectrum purchasing

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Keywords: 5G private network; network security; security risk prevention and control

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Beamforming Optimization for RIS-Aided SWIPT in Cell-Free MIMO Networks

Keywords: cell-free networks; SWIPT; Reconfigurable intelligent surface; SCA; ADMM

Cite as: Ziyi Yang,Yu Zhang "Beamforming Optimization for RIS-Aided SWIPT in Cell-Free MIMO Networks"[J]China Communications,vol.18,no.9,pp.175-191,2021

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Keywords: cyber-physical systems; anomaly detection; data integrity attacks

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M²LC-Net: A Multi-modal Multi-disease Long-tailed Classification Network for Real Clinical Scenes

Keywords: deep learning; multi modal; long-tail; ophthalmic disease classification

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Secure Transmission in Downlink Non-Orthogonal Multiple Access Based on Polar Codes

Keywords: physical layer security; polar codes; non-orthogonal multiple access; artificial noise

Cite as: Ce Sun, Zesong Fei, Bin Li, Xinyi Wang, Nan Li, Lijie Hu"Secure Transmission in Downlink Non-Orthogonal Multiple Access Based on Polar Codes"[J]China Communications,vol.18,no.9,pp.221-235,2021

Proactive Connection Recovery Strategy with Recovery Time Constraint for Survivable Elastic Optical Networks

Keywords: routing and spectrum assignment; halfway signaling exchange-shared path protection (HSESPP); dedicated path protection; bandwidth blocking probability (BBP)

Cite as: Dinesh Kumar , Rajiv Kumar, Neeru Sharma"Proactive Connection Recovery Strategy with Recovery Time Constraint for Survivable Elastic Optical Networks"[J]China Communications,vol.18,no.9,pp.236-248,2021

Correlation-Aware Replica Prefetching Strategy to Decrease Access Latency in Edge Cloud

Keywords: edge cloud; access latency; replica prefetching; correlation-aware; access rule

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October

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Build a Large-Scale and Wide-Area Quantum Internet Based on an OSI-Alike Model

Keywords: quantum internet; entanglement swapping; quantum repeater; teleportation

Cite as: Zhonghui Li, Kaiping Xue, Jian Li, Nenghai Yu, Jianqing Liu"Build a Large-Scale and Wide-Area Quantum Internet Based on an OSI-Alike Model"[J]China Communications,vol.18,no.10,pp.1-14,2021

Code Design and Latency Analysis of Distributed Matrix Multiplication with Straggling Servers in Fading Channels

Keywords: mobile edge computing; distributed matrix multiplication; coded computing; cooperative transmission

Cite as: Ning Liu, Kuikui Li, Meixia Tao"Code Design and Latency Analysis of Distributed Matrix Multiplication with Straggling Servers in Fading Channels"[J]China Communications,vol.18,no.10,pp.15-29,2021

Maximum Network Throughput Based on Cross-Technology Communication for Sensor Networks

Keywords: network throughput; cross-technology communication; sensor networks

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Keywords: loss functions; deep learning; machine learning; unsupervised learning; generative adversarial networks (GANs); image synthesis

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Keywords: variational Bayesian inference; expectation propagation; quantization; line spectral estimation; mmse; gridless

Cite as: Jiang Zhu, Qi Zhang, Xiangming Meng"Gridless Variational Bayesian Inference of Line Spectral from Quantized Samples"[J]China Communications,vol.18,no.10,pp.77-95,2021

Multi-Task Deep Learning Based Hybrid Precoding for mmWave Massive MIMO System

Keywords: millimeter wave; massive MIMO; hybrid precoding; uniform channel decomposition; multitask learning

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Outage Performance and Optimal Design of MIMO-NOMA Enhanced Small Cell Networks With Imperfect Channel-State Information

Keywords: imperfect channel-state information (CSI); multiple-input multiple-output (MIMO); non-orthogonal multiple access (NOMA); small cell networks (SCNs)

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General Galois Processor for Transmitters in 5G/6G Base Stations

Keywords: multi-mode parallel encoding; ASIP; SIMD; URLLC; 5G base station

Cite as: Qingbo Zhai ,Yong Bai ,Dake Liu"General Galois Processor for Transmitters in 5G/6G Base Stations"[J]China Communications,vol.18,no.10,pp.129-134,2021

Enhanced Power Choice Barring Scheme For Massive MTCs With Grant-Free NOMA

Keywords: grant-free; massivemachine-typecommunication; NOMA; power level choosing

Cite as: Liang Wu, Xiaorui Tang, Zaichen Zhang, Jian Dang"Enhanced Power Choice Barring Scheme For Massive MTCs With Grant-Free NOMA"[J]China Communications,vol.18,no.10,pp.135-147,2021

Time-Domain Dual Component Computation Diversity Based on Generalized Hybrid Carrier

Keywords: TDC-CD; transform domain; GHC system; diversity order

Cite as: Yuqing Feng, Xuejun Sha, Yong Li, Xiaojie Fang, Yusi Zhang"Time-Domain Dual Component Computation Diversity Based on Generalized Hybrid Carrier"[J]China Communications,vol.18,no.10,pp.148-157,2021

On the Performance of Active Analog Self-Interference Cancellation Techniques for Beyond 5G Systems

Keywords: full-duplex; beyond 5G system; self-interference cancellation; optical domain-based canceller

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Multi Object Tracking Using Gradient-Based Learning Model in Video-Surveillance

Keywords: binary labeling; computer vision; gradient pattern; laplacian operator; object Tracking

Cite as: D. Mohanapriya ，Dr. K. Mahesh"Multi Object Tracking Using Gradient-Based Learning Model in Video-Surveillance"[J]China Communications,vol.18,no.10,pp.169-180,2021

Catalyzing Random Access at Physical Layer for Internet of Things: An Intelligence Enabled User Signature Code Acquisition Approach

Keywords: Internet of Things (IoT); artificial intelligence; physical layer; cross-entropy; random access

Cite as: Xiaojie Fang, Xinyu Yin, Xuejun Sha, Jinghui Qiu, Hongli Zhang"Catalyzing Random Access at Physical Layer for Internet of Things: An Intelligence Enabled User Signature Code Acquisition Approach"[J]China Communications,vol.18,no.10,pp.181-192,2021

Wireless Network Requirements and Solutions for the Future Circular Collider: A Hostile Indoor Environment

Keywords: future circular collider; LHC; tunnel; low latency; harsh indoor; wireless communications

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Traffic Engineering Based on Deep Reinforcement Learning in Hybrid IP/SR Network

Keywords: SDN; deep reinforcement learning; segment routing; traffic engineering; equal cost multiple paths

Cite as: Bo Chen, Penghao Sun, Peng Zhang, Julong Lan, Youjun Bu, Juan Shen"Traffic Engineering Based on Deep Reinforcement Learning in Hybrid IP/SR Network"[J]China Communications,vol.18,no.10,pp.204-213,2021

A Task-Resource Joint Management Model with Intelligent Control for Mission-Aware Dispersed Computing

Keywords: dispersed computing; computing resource management; intelligent control

Cite as: Chengcheng Zhou, Chao Gong, Hongwen Hui, Fuhong Lin, Guangping Zeng"A Task-Resource Joint Management Model with Intelligent Control for Mission-Aware Dispersed Computing"[J]China Communications,vol.18,no.10,pp.214-232,2021

Research on Online Education Consumer Choice Behavior Path Based on Informatization

Keywords: information and communications technology(ICT); consumer choice behavior; rational choice theory; the fifth-Generation mobile communication system(5G); online education

Cite as: Yongrui Su ，Ling Zhao "Research on Online Education Consumer Choice Behavior Path Based on Informatization"[J]China Communications,vol.18,no.10,pp.233-252,2021

November

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Customer Tiered Purchase Forecast by mobile edge computing based on Pareto/NBD and SVR

Keywords: e-commerce; customer behavior; Pare-to/NBD model; SVR model; ARIMA model; mobile edge computing

Cite as: Yan Li, Ying Zhang, Fei Luo, Wei Zou"Customer Tiered Purchase Forecast by mobile edge computing based on Pareto/NBD and SVR"[J]China Communications,vol.18,no.11,pp.1-10,2021

Multi-objective Task Assignment for Maximizing Social Welfare in Spatio-temporal Crowdsourcing

Keywords: spatio-temporal crowdsourcing; edge computing; task assignment; multi-objective optimization; particle swarm optimization; Pareto optimal solution
Cite as: Shengnan Wu, Yingjie Wang, Xiangrong Tong"Multi-objective Task Assignment for Maximizing Social Welfare in Spatio-temporal Crowdsourcing"[J]China Communications,vol.18,no.11,pp.11-25,2021

Deep Reinforcement Learning-based Computation Offloading for 5G Vehicle-aware Multi-access Edge Computing Network

Keywords: multi-access edge computing; computation offloading; 5G; vehicle-aware; deep reinforcement learning; deep q-network
Cite as: Ziying Wu, Danfeng Yan"Deep Reinforcement Learning-based Computation Offloading for 5G Vehicle-aware Multi-access Edge Computing Network"[J]China Communications,vol.18,no.11,pp.26-41,2021

Privacy-Preserving Collaborative Filtering Algorithm Based on Local Differential Privacy

Keywords: personalized recommendation; collaborative filtering; data perturbation; privacy protection; local differential privacy
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Joint Design of Content Delivery and Recommendation in Wireless Caching Networks

Keywords: wireless caching networks; content caching; content recommendation; deep reinforcement learning; resource management
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Remaining Time Prediction for Business Processes with Concurrency Based on Log Representation

Keywords: business process monitoring; remaining time prediction; LSTM; feature representation; concurrency

Cite as: Rui Cao, Weijian Ni, Qingtian Zeng, Faming Lu, Cong Liu, Hua Duan"Remaining Time Prediction for Business Processes with Concurrency Based on Log Representation"[J]China Communications,vol.18,no.11,pp.76-91,2021"

Novel Private Data Access Control Scheme Suitable for Mobile Edge Computing

Keywords: mobile edge computing (MEC); privacy protection; access control; anonymous authentication

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AI Enlightens Wireless Communication: Analyses, Solutions and Opportunities on CSI Feedback

Keywords: MIMO; CSI feedback; deep learning; data preprocessing; quantization

Cite as: Han Xiao, Zhiqin Wang, Wenqiang Tian, Xiaofeng Liu, Wendong Liu, Shi Jin, Jia Shen, Zhi Zhang, Ning Yang"AI Enlightens Wireless Communication: Analyses, Solutions and Opportunities on CSI Feedback"[J]China Communications,vol.18,no.11,pp.104-116,2021

IoT-Fog Architectures in Smart City Applications: A survey

Keywords: fog computing; edge computing; mobile edge computing; resource allocation, offloading; software defined networks; smart city; smart grid

Cite as: Shahid Sultan Hajam , Shabir Ahmad Sofi"IoT-Fog Architectures in Smart City Applications: A survey"[J]China Communications,vol.18,no.11,pp.117-140,2021

Pilot Allocation Optimization Using Enhanced Salp Swarm Algorithm for Sparse Channel Estimation

Keywords: OFDM channel estimation; CWSSA; compressed sensing; salp swarm algorithm; pilot allocation

Cite as: Ning Li, Kun Yao, ZhongLiang Deng, XiaoHao Zhao, JianChang Qin"Pilot Allocation Optimization Using Enhanced Salp Swarm Algorithm for Sparse Channel Estimation"[J]China Communications,vol.18,no.11,pp.141-154,2021

Trust-based Routing Optimization using Multi-Ant Colonies in wireless sensor network

Keywords: trust; wireless sensor network; secure routing

Cite as: Maryam hajiee, Mehdi Fartash ，Nafiseh Osati Eraghi"Trust-based Routing Optimization using Multi-Ant Colonies in wireless sensor network"[J]China Communications,vol.18,no.11,pp.155-167,2021

Put Others Before Itself: A Multi-leader One-follower Anti-jamming Stackelberg Game Against Tracking Jammer

Keywords: coordinated anti-jamming; channel access; Stackelberg game; tracking jammer; active attraction

Cite as: Xiaobo Zhang, Hai Wang, Yifan Xu, Zhibin Feng, Yunpeng Zhang."Put Others Before Itself: A Multi-leader One-follower Anti-jamming Stackelberg Game Against Tracking Jammer"[J]China Communications,vol.18,no.11,pp.168-181,2021

DCGAN based spectrum sensing data enhancement for behavior recognition in self-organized communication network

Keywords: spectrum sensing; communication behavior recognition; small-sample data enhancement; self-organized network

Cite as: Kaixin Cheng, Lei Zhu, Changhua Yao, Lu Yu, Xinrong Wu, Xiang Zheng, Lei Wang, Fandi Lin"DCGAN based spectrum sensing data enhancement for behavior recognition in self-organized communication network"[J]China Communications,vol.18,no.11,pp.182-196,2021

On Treatment Patterns for Modeling Medical Treatment Processes in Clinical Practice Guidelines Treatment Processes in Clinical Practice Guidelines

Keywords: clinical practice guidelines; treatment patterns; process modeling; BPMN; DMN; CMMN

Cite as: Liqin Yang, Guosheng Kang, Liang Zhang"On Treatment Patterns for Modeling Medical Treatment Processes in Clinical Practice Guidelines Treatment Processes in Clinical Practice Guidelines"[J]China Communications,vol.18,no.11,pp.197-209,2021

A Key Management Scheme Using (p, q)-Lucas Polynomials in Wireless Sensor Network

Keywords: key management; lucas polynomial; WSN security; pairwise key distribution; key generation; hierarchical key management

Cite as: Amit Kumar Gautam ，Rakesh Kumar"A Key Management Scheme Using (p, q)-Lucas Polynomials in Wireless Sensor Network"[J]China Communications,vol.18,no.11,pp.210-228,2021

Organization-Driven Business Process Configurable Modeling for Spatial Variability

Keywords: S-BPM; configurable modeling; organization-driven; spatial variability; business objects; services

Cite as: Guosheng Kang, Liqing Yang, Liang Zhang, Jianxun Liu,Yiping Wen"Organization-Driven Business Process Configurable Modeling for Spatial Variability"[J]China Communications,vol.18,no.11,pp.229-242,2021

Hybrid Recommendation Based on Graph Embedding

Keywords: graph embedding; hybrid recommendation; collaborative filtering; tagging

Cite as: Cheng Zeng,Haifeng Zhang,Junwei Ren,Chaodong Wen,Peng He"Hybrid Recommendation Based on Graph Embedding"[J]China Communications,vol.18,no.11,pp.243-256,2021

December

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An Overview of Wireless Communication Technology Using Deep Learning

Keywords: artificial intelligence; wireless communication; deep learning; cognitive radio; edge computing; channel measurement; end-to-end encoder and decoder; visible light communication

Cite as: Jiyu Jiao,Xuehong Sun Liang Fang, Jiafeng Lyu"An Overview of Wireless Communication Technology Using Deep Learning"[J]China Communications,vol.18,no.12,pp.1-36,2021

Relay-Assisted Secure Short-Packet Transmission in Cognitive IoT with Spectrum Sensing

Keywords: cognitive Internet of Things; short-packet communications; physical layer security; spectrum sensing

Cite as: Yong Chen, Yu Zhang, Baoquan Yu, Tao Zhang, Yueming Ca"Relay-Assisted Secure Short-Packet Transmission in Cognitive IoT with Spectrum Sensing"[J]China Communications,vol.18,no.12,pp.37-50,2021

Frequency-hopping Frequency Reconnaissance and Prediction for Non-cooperative Communication Network

Keywords: non-cooperative communication network; frequency-hopping; frequency prediction; LSTM

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Passive Localization of Multiple Sources Using Joint RSS and AOA Measurements in Spectrum Sharing System

Keywords: multiple sources localization; passive localization; received signal strength (RSS); angle of arrival (AOA); measurements-source association

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Specific Emitter Identification for IoT Devices Based on Deep Residual Shrinkage Networks

Keywords: specific emitter identification; IoT devices; deep learning; soft threshold; deep residual shrinkage networks

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Primary User Adversarial Attacks on Deep Learning-Based Spectrum Sensing and the Defense Method

Keywords: spectrum sensing; cognitive radio; deep learning; adversarial attack; autoencoder; defense

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Intelligent Spectrum Management Based on Radio Map for Cloud-Based Satellite and Terrestrial Spectrum Shared Networks

Keywords: cloud-based satellite and terrestrial spectrum shared networks; spectrum management; interference analysis; spectrum utilization rate

Cite as: Ximu Zhang, Min Jia, Xuemai Gu, Qing Guo"Intelligent Spectrum Management Based on Radio Map for Cloud-Based Satellite and Terrestrial Spectrum Shared Networks"[J]China Communications,vol.18,no.12,pp.108-118,2021

Proactive Spectrum Monitoring for Suspicious Wireless Powered Communications in Dynamic Spectrum Sharing Networks

Keywords: proactive spectrum monitoring; sum ergodic monitoring rate; jamming-assisted proactive spectrum monitoring; half-duplex; fundamental tradeoff; dynamic spectrum sharing network

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Coalitional Game Based Joint Beamforming and Power Control for Physical Layer Security Enhancement in Cognitive IoT Networks

Keywords: physical layer secure transmission; IoT; coalitional game; alternative optimization method

Cite as: Zhaoye Xu, Aiyan Qu, Kang An"Coalitional Game Based Joint Beamforming and Power Control for Physical Layer Security Enhancement in Cognitive IoT Networks"[J]China Communications,vol.18,no.12,pp.139-150,2021

Evolution of Road Traffic Congestion Control: A Survey from Perspective of Sensing, Communication, and Computation

Keywords: road traffic congestion control; congestion detection; traffic signal control; vehicle route guidance; sensing techniques; communication and computation capability

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An Area Optimization Based Cooperative Localization Algorithm with Node Selection

Keywords: cooperative localization; node selection; PDR; indoor localization

Cite as: Ke Han, Chongyu Zhang, Huashuai Xing, Yunfei Xu"An Area Optimization Based Cooperative Localization Algorithm with Node Selection"[J]China Communications,vol.18,no.12,pp.178-195,2021

Cubic Metric Reduction for Repetitive CAZAC Sequences in Frequency Domain

Keywords: 5G; OFDM; cubic metric; NR-U; occupied channel bandwidth; CAZAC; zadoff-chu sequence

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The Dual-Polarized Staggered Stacked Patches Antenna

Keywords: staggered stacked patches; wide impedance bandwidth; high isolation

Cite as: Xinyu Cao, Jinling Zhang, Hongzhen Yang, Hourong Li"The Dual-Polarized Staggered Stacked Patches Antenna"[J]China Communications,vol.18,no.12,pp.208-218,2021

Novel DDS based OFDM Transmitter Structure without IFFT and Interpolation Filter

Keywords: OFDM; transmitter; direct digital synthesis (DDS); fast Fourier transform (FFT)

Cite as: Sanjun Liu, Guangming Gan"Novel DDS based OFDM Transmitter Structure without IFFT and Interpolation Filter"[J]China Communications,vol.18,no.12,pp.219-229,2021

Spectrum Efficiency Maximization for Cooperative Power Beacon-Enabled Wireless Powered Communication Networks

Keywords: spectrum efficiency; power beacon; WPCN; time splitting; interference channel; wireless power transfer

Cite as: Wenjun Xu, Wei Chen, Yongjian Fan, Zhi Zhang, Xinxin Shi"Spectrum Efficiency Maximization for Cooperative Power Beacon-Enabled Wireless Powered Communication Networks"[J]China Communications,vol.18,no.12,pp.230-251,2021

Multi-Objective Bacterial Foraging Optimization Algorithm Based on Effective Area in Cognitive Emergency Communication Networks

Keywords: wireless communications; emergency communications; cognitive radio networks; multi-objective optimization algorithm; effective areas; self-adaption

Cite as: Shibing Zhang, Xue Ji, Lili Guo, Zhihua Bao"Multi-Objective Bacterial Foraging Optimization Algorithm Based on Effective Area in Cognitive Emergency Communication Networks"[J]China Communications,vol.18,no.12,pp.252-269,2021

Relay Beamforming Design for Physical Layer Secure Communication via Line Search Algorithm

Keywords: wireless communication; physical layer security; line search; robust optimization

Cite as: Siqi Chen, Cong Sun"Relay Beamforming Design for Physical Layer Secure Communication via Line Search Algorithm"[J]China Communications,vol.18,no.12,pp.270-284,2021

Three-Dimensional Trajectory Optimization for Secure UAV-Enabled Cognitive Communications

Keywords: UAV-enabled cognitive communications; physical-layer security; trajectory optimization

Cite as: Yuhan Jiang, Jia Zhu"Three-Dimensional Trajectory Optimization for Secure UAV-Enabled Cognitive Communications"[J]China Communications,vol.18,no.12,pp.285-296,2021

Integration of Communication and Computing in Block-chain-Enabled Multi-Access Edge Computing Systems

Keywords: blockchain; multi-access edge computing; mutual empowerment; network architecture

Cite as: Zhonghua Zhang, Jie Feng, Qingqi Pei , Le Wang, Lichuan Ma"Integration of Communication and Computing in Block-chain-Enabled Multi-Access Edge Computing Systems"[J]China Communications,vol.18,no.12,pp.297-314,2021

An Efficient Three-Factor Privacy-Preserving Authentication and Key Agreement Protocol for Vehicular Ad-Hoc Network

Keywords: authentication; vehicular ad-hoc network; security; three-factor

Cite as: Tao Xu, Cheng Xu, Zisang Xu"An Efficient Three-Factor Privacy-Preserving Authentication and Key Agreement Protocol for Vehicular Ad-Hoc Network"[J]China Communications,vol.18,no.12,pp.315-331,2021

Medical Treatment Process Modeling Based on Process Mining and Treatment Patterns

Keywords: business process modeling; medical treatment processes; treatment patterns; clinical practice guidelines

Cite as: Liqin Yang, Guosheng Kang, Liang Zhang"Medical Treatment Process Modeling Based on Process Mining and Treatment Patterns"[J]China Communications,vol.18,no.12,pp.332-349,2021