2021 IEEE International Conference on Computer Science, Artificial Intelligence and Electronic Engineering (CSAIEE 2021)

Virtual Conference
20 – 22 August 2021

IEEE Catalog Number: CFP21BA4-POD
ISBN: 978-1-6654-2205-5

Copyright © 2021 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: CFP21BA4-POD
ISBN (Print-On-Demand): 978-1-6654-2205-5
ISBN (Online): 978-1-6654-2204-8

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

Table of Contents

Analysis of Stock Price Based On the XGBoost Algorithm With EMA-19 and SMA-15 Features 1

Gao Yuan, Tong Zhang, Wanlu Zhang, Hongsheng Li

CycleGAN-based Cloud2painting Translation 5

Jingshuo Liu, Shu Zhang, Xinrui Ma, Maoxuan Feng

Sentiment Analysis of Chinese Product Reviews Based on BERT Word Vector and Hierarchical Bidirectional LSTM 9

Kui Zhang, Min Hu, Fuji Ren, Pengyuan Hu

Insincere Question Classification by Deep Neural Networks 15

Chi Chen

A Multi-objective Learning Algorithm for Related Recommendations 24

Jiawei Zhang

Can "microVM" become the next generation computing platform?

Performance comparison between light weight Virtual Machine, container, and traditional Virtual Machine 29

Zicheng Wang

Research on Recommendation Algorithm Based on Cross-grained Emotion Analysis 35

Jin Xiao, Bo Liu, Sihan Li, Ke Liao, Jing Huang

Improved Kerberos protocol based on sliding window and its formal analysis 39

Yingchao Ren, Xuefeng Yan, Haoming Guo

Deep learning-based browser record analysis research 44

Haomin Pang, Haibo Luo, Zhaoxu Wu, Biwu Yi

Research on Countermeasures of Improving Competitiveness of Equipment Manufacturing Enterprises Based on Factor Analysis 49

Zimin Yin, Jin Yin

K-means clustering algorithm and Python implementation 55

Bokai Wu

Application of Active Learning in Decoding 60

Yunfei Quan

Lightweight convolutional neural network of YOLO v3-Tiny algorithm on FPGA for target detection 65

Jitong Xin, Meiyi Cha, Luojia Shi, Chunyu Long, Hairong Li, Fangcong Wang, Peng Wang

Basic Ensemble Learning of Encoder Representations from Transformer for Disaster-mentioning Tweets Classification 71

Yizhou Yang

Research on C4.5 Algorithm Optimization For User Churn 75

Chao Deng, Zhaohui Ma

Adaptive firefly algorithm based on reverse search strategy 80
Hongbo Yin, Huipeng Meng, Yuchen Zhang
Shopee Price Match Guarantee Algorithm based on multimodal learning 84
Yaxuan Fang, Junhan Wang, Lei Jia, Fung wai Kin
Resonating response makes people feel better
An empathetic protocol in dialogue system 88
Mingwei Shi
Bridge Detection Algorithm Based on Rotation and Scale Invariance 96
Runlin Li, Huanxin Zou, Shitian He, Xu Cao, Fei Cheng, Li Sun
Measuring Hilbert-Schmidt Independence Criterion with Different Kernels 101
Chenge Hu, Huaqing Zhang, Yuyu Zhou, Ruixin Guan
Research on Literary Style Based on Statistical Analysis of Computational Language 105
Yonghua Chen, Jia wei Chen
A Solution for Metropolis: Autonomous Transportation Hub System Using OpenCV Algorithm 110
Kun Wang
Application of deep intensive learning in RNA secondary structure prediction 114
Jiaming Gu
Research on Dynamic Monitoring and Early Warning Methods of Company Management Driven by Artificial Intelligence 122
Yuantian Zhu
A multi-scale surface target recognition algorithm based on attention fusion mechanism 126
Runze Guo, Shaojing Su, Zhen Zuo, Bei Sun
Rule-Based Approach to the Automatic Detection of Individual Tree Crowns in RGB Satellite Images 132
Tanqiu Jiang, Ziyu Xiong
Recent research trends on Model Compression and Knowledge Transfer in CNNs 136
Haoqian Xue, Keyu Ren
Intelligent Recognition of Digital Archives of Application and Installation in Power Business Expanding Based On Image Recognition Technology 143
Ling Zeng, Haihong Liang, Linghan Meng, Yuqi Yang, Qian Guo
Prediction of Diabetes with its Symptoms Based on Machine Learning 147
Xingchen Xu, Jinhui Ma, Xiao Huang, Xuejianwei Luo
Cartoon Figure Recognition with The Deep Residual Network 157
Ziyi Guo
The Impact of Compiler Optimizations on Symbolic Execution 161
Jiaorui Shen

Using Machine Learning Models to Detect Different Intrusion on NSL-KDD 166
Huilong Ao

CTR Prediction Model Using xDeepFM and Bayesian optimization 178
Yiying Zhang

Back Propagation Optimization of Convolutional Neural Network Based on the left and the right hands Identification 182
Taifen Bao, Huimin Jiao, Su Gao, Jifei Cai, Yuansheng Qi

Temporal Attention Based TCN-BIGRU Model for Energy Time Series Forecasting 187
Liang Li, Min Hu, Fuji Ren, Haijun Xu

Prediction of Development Prospect of Electric Vehicles in China by Using Natural Language Processing 194
Shuchen Zheng, Longtao Wang, Qianhui Jin, Haoran Zhang

Res-Attention Net: An Image Dehazing Network 200
Shuai Song, Renyan Zhang, Zhipeng Qiu, Jiawei Jin, Shangbin Yu

Deep Session Interest Network Based on the Time Interval Encoding for the Click-through Rate Prediction 206
Xi Sun, Zhimin Lv

Optimized XGBoost based sparrow search algorithm for short-term load forecasting 213
Jialei Song, Lijun Jin, Yingpeng Xie, Cong Wei

Analysis of IoT-based Smart Home Applications 218
Zixin Huang

Face Restoration Network with Feature Prior 222
Yu Liu

LightGBM Based Optiver Realized Volatility Prediction 227
Yue Wu, Qi Wang

Improve Semantic Segmentation of Remote sensing Images with K-Mean Pixel Clustering

A semantic segmentation post-processing method based on k-means clustering 231
Xiaohui Zeng, Isabelle Chen, Pai Liu

DeepfakeVideo Detection by Combining Convolutional Neural Network (CNN) and Recurrent Neural Network (RNN) 236
Yunes Al-Dhabi, Shuang Zhang

A SIZE OPTIMIZATION SCHEME OF SRAM 6T MEMORY CELL 242
Wei Guo, Lirong Hu, Dong Yu

The Application of Big Data in Bias Analysis on Mixed Teaching Mode 248
Heng Zhang, Zhengbin Feng

ParallelMOT: Pay More Attention in Tracking 252
Changzhi Lv, Changdong Shu, Yingjun Lv, Chunsheng Song

THE DETECTION OF HELA CELLS IN BRIGHTFIELD IMAGES 257
Hao Peng, Tao Xiang, Zhehui Huang, Chenye Tang

Analysis of sentiment optimization on social networks based on statistical data 263
Yingshi Chen

Optimization of GNSS Signals Acquisition Algorithm Complexity Using Comb Decimation Filter 268
Yong Li, Chu He, Qile Zhao, Jiarui Hu

Research on target tracking technology based on machine learning 273
Qian Chen, Chao Ye

Detecting Adversarial Samples with Neuron Coverage 277
Huayang Cao, Wei Kong, Xiaohui Kuang, Jianwen Tian

Teacher-Student Network for Low-quality Remote Sensing Ship Detection 283
Shitian He, Huanxin Zou, Runlin Li, Xu Cao, Fei Cheng, Juan Wei

Student behavior detection based on YOLOv4-Bi 288
Xiaokang Ren, Deyi Yang

A Novel Temperature Error Compensation method for MEMS Gyros Based on WOA-SVR 292
Gongliu Yang, Kun Zhang, Ruizhao Cheng, Yongfeng Zhang

Momentum Method for Improving the Convergence of Newton-Raphson Method for Nonlinear Circuit Transient Simulations 296
Wen Jia Hu

Big data technology-based mining and analysis of application and installation in power business expanding 304
Haihong Liang, Xiao Cui, Ling Zeng, Wei Zheng, Yang Dong

Data Center Networks: Address Scheming, Traffic Distribution, and Load Balancing 309
Jinyang Jia, Gongxuan Liu

Wood acoustic emission signal classification based on IMF's features 319
Meilin Zhang, Junqiu Li, Qinghui Zhang, Jiale Xu

Power Grid Fault Location Method Based on Pre-training of Convolutional Autoencoder 324
Ling Zheng, Peixin Xu, Jiayin Bai

Comparison of Strategies for Optimizing Bi-RRT* on Mobile Robots 328
Rui Yang, Peixu Cai, Luming Wang

Video motions classification based on CNN 335
Yue Luo, Boyuan Yang

Author Index 339