2023 5th International Conference on Data-driven Optimization of Complex Systems (DOCS 2023)

Tianjin, China
22-24 September 2023

IEEE Catalog Number: CFP23CM5-POD
ISBN: 979-8-3503-9353-8

Copyright © 2023 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: CFP23CM5-POD
ISBN (Print-On-Demand): 979-8-3503-9353-8
ISBN (Online): 979-8-3503-9352-1

Additional Copies of This Publication Are Available From:

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

TABLE OF CONTENTS

Solving the Influence Maximization Problem Using a Genetic Deep Reinforcement Learning Approach 1
Shaqu Qumu, Caiting Zhu, Qiulin Luo, Min Zhou, Shuai Wang

Inventory Control with Lateral Transshipment Using Proximal Policy Optimization 9
Ziang Liu, Tatsushi Nishi

Enhancing Vehicle Routing Solutions Through Attention-Based Deep Reinforcement Learning 15
Jianlin Chen, Jianping Luo

Surrogate-Assisted Hybrid Metaheuristic for Mixed-Variable 3-D Deployment Optimization of Directional Sensor Networks 24
Yuntian Zhang, Chen Chen, Tongyu Wu, Changhao Miao, Shuxin Ding

An Unconstrained Auxiliary Framework for Constrained Many-Objective Optimization 33
Kangjia Qiao, Jing Liang, Ying Bi, Kunjie Yu, Caitong Yue, Boyang Qu

Integrated Dynamic Control of Process and Cost in Complicated R&D Projects: A Reinforcement Learning Approach 41
Yichi Zhang, Su Chen, Bing Tu, Pengyu Yan

An Empirical Study on Neural Networks Pruning: Trimming for Reducing Memory or Workload 47
Kaiwen Xiao, Xiaodong Cai, Ke Xu

Transferable Preference Learning Assist Multi-Objective Decision Analysis for Hydrocracking 54
Yang Liu, Guo Yu, Jian Cheng, Chao Jiang, Xinzhe Wang, Lianbo Ma

Data Uncertainty Learning in Breast Cancer Recognition 62
Ku Zhao, Tao Luo, Kehan Chen, Libo Zhang

A Permutation Group-Based Evolutionary Algorithm for Car Sequencing Problems in Assembly Lines 68
Shuai Shao, Ye Tian, Luchen Wang, Shangshang Yang, Panpan Zhang, Xingyi Zhang

Portfolio Optimization Based on Principal Component Analysis and Second-Order Surrogate-Assisted Memetic Differential Evolution Algorithm 76
Ning Han, Yinnan Chen, Xinchao Zhao, Mingzhang Han

Ensemble Masked Autoencoder and Gaussian Mixture Models for Cardinality Estimation 83
Yimeng Chen, Devin Jia, Ying Lei, Bo Li

Time Series Anomaly Detection Based on Data Stream Clustering 90
Xudong Feng, Jin Liu, Jialu Yin, Handing Wang, Ruochen Liu

A Novel Two-Stage Evolutionary Algorithm for Constrained Multiobjective Optimization 97
Xiwen Yang, Xingxing Hao, Li Chen, Dekui Wang, Wei Zhou, Wei Liu

Adaptive Merging and Coordinated Offspring Generation in Multi-Population Evolutionary Multi-Modal Multi-Objective Optimization 105
Xiangyu Wang, Tianzi Zheng, Yaochu Jin

Expression Recognition and Intelligent Classroom State Mining in Teaching Videos Based on Semi-Supervised Learning Generative Adversarial Network 113
Ruoyu Fan, Meiyu Liang, Mengran Yin, Junping Du

Enhanced Stock Movement Prediction with Event Graph and Dynamic Sentiment Analysis 120
Shilong Ou, Zhe Xue, Xu Shao, Yawen Li, Zhensheng Xian, Liang Chen

Federated *k*-Dominant Skyline: An Efficient Approach Under Differential Privacy 128
Guoqing Cai, Yexuan Shi, Hao Zhou, Nan Zhou, Manxue Guo, Zimeng Jia

Comparative Analysis of Surrogate Models for High-Dimensional Expensive Problems 136
Xun Huang, Fei Li, Yuan-Chao Liu

A DeepAR-Based Neural Network for Time Series Forecasting 142
Shaojie Shi, Xihe Qiu, Yajun Ru, Xiaoyu Tan

Relational Learning with Attribute-Based Multi-Head Attention Regulator for Few-Shot Knowledge Graph Completion 149
Yifeng Gu, Devin Jia, Ying Lei, Bo Li

Structural Balance Computation of Signed Hypergraphs Via Memetic Algorithm 157
Xinchu Han, Ruijie Xu, Lijia Ma, Zengyang Shao, Yuan Bai, Shanfeng Wang

Dual Semantic Enhanced Event Causality Identification with Derivative Temporal Prompt 164
Ying Liu, Zhe Xue, Yawen Li, Xu Shao, Yu Zang, Junjiang Wu

Topic Model Based on Co-Occurrence Word Networks for Unbalanced Short Text Datasets 172
Chengjie Ma, Junping Du, Meiyu Liang, Zeli Guan

Collaborative Production Task Allocation Decision for Multi Smart Factory 179
Xiaodan Wu, Yuchen Lin, Tao Lin

Data-Driven Regression Modeling for Measuring the Influence of Infodemic Over Social Media 187
Tian-Fang Zhao, Ling-Ling Zhang, Zhi-Xuan Zhang, Li-Ming Ma

EGHAN: Event Graph Enhanced Hypergraph Attention Network for Stock Movement Forecasting 195
Liang Chen, Zhe Xue, Xu Shao, Yawen Li, Shilong Ou, Boang Li

CPPFEE: A Cascade Pointer Prediction Framework for Financial Event Extraction 203
Tianlong Zhang, Zhe Xue, Xu Shao, Yawen Li, Junjiang Wu, Yunfei Long

Data-Driven Accessibility Public Welfare Communication and Mobile Crowdsourcing System 211
Tian-Fang Zhao, Shu-Xian Zheng, Qi-Hang Zheng, Hong Gu

HWTune: A Hardware-Aware Database Tuning System with Deep Reinforcement Learning 219
Jian Wang, Lei Chen, Lin Yang, Ming Wang

A Deep Learning Prediction Approach for Machine Workload in Cloud Computing 227
Yiming Bai, Lei Chen, Ying Lei, Hongjuan Xie

Decision-Making for Satellite Anti-Interception Missions Leveraging Multi-Agent Reinforcement Learning 235
Zixuan Chen, Jianqi Wang, Dan Wang, Sheng Yu, Jing Huo, Yang Gao

A Constrained Multi-Objective Evolutionary Algorithm Based on Early Convergence Followed by Diversity 242
Wenji Li, Yifeng Qiu, Zhaojun Wang, Qinchang Zhang, Ruitao Mai, Biao Xu, Yue Zhang, Jiafan Zhuang, Zhun Fan

Long Short Dynamic Graph Neural Network for Traffic Flow Forecasting 250
Liuyang Guo, Huicai Wu, Yanli Jiao, Ping Zhang

Multiobjective Fuzzy Competitive Swarm Optimization for High-Dimensional Feature Selection 258
Xiaomin Li, Bo Li, Yunhe Wang

Evolutionary Multi-Objective Neural Architecture Search for Generalized Cognitive Diagnosis Models 264
Shangshang Yang, Cheng Zhen, Ye Tian, Haiping Ma, Yuanchao Liu, Panpan Zhang, Xingyi Zhang

Multi-Objective Particle Swarm Optimization Algorithm for Unequal-Area Dynamic Facility Layout Problem 274
Jingfa Liu, Taichao Xiao, Wanhua Li

Single Machine Scheduling Problem with Multiple Preventive Maintenance Levels and Setup Times 281
Mengyue Yang, Wenjie Dong, Sifeng Liu

Federated Graph Neural Networks with Bipartite Embedding for Multi-Objective Facility Location 287
Zeqi Zheng, Ziqi Wang, Xueming Yan, Yaochu Jin, Shiqing Liu, Qiqi Liu

Dynamic Fair Federated Learning Based on Reinforcement Learning 295
Weikang Chen, Junping Du, Yingxia Shao, Jia Wang, Yangxi Zhou

1DCNN-TRSNet: A Hybrid End-to-End Arrhythmia Classification Deep Network Based on Transformer 303
Yongtao Chen, Sen Qiu, Zhelong Wang, Hongyu Zhao

Identification of Switched Gated Recurrent Neural Networks Using the EM Algorithm 310
Wentao Bai, Suhang Gu, Chao Yan, Haoyu Zhang, Chunli Jiang, Fan Guo

Dynamic Constrained Multi-Objective Evolutionary Optimization Via Adaptive Two-Stage Archiving and Autoencoder Prediction 316
Qianhui Wang, Yulong Ye, Qingling Zhu, Songbai Liu, Qiuzhen Lin

Dual-State-Driven Evolutionary Optimization for Expensive Optimization Problems with Continuous and Categorical Variables 324
Lindong Xie, Genghui Li, Kangnian Lin, Zhenkun Wang

AGF-Net: Adaptive Road Extraction Network with Global Feature Fusion 331
Yajuan Zhang, Lan Zhang, Penghui Niu, Wenjia Xu

A Data-Driven Algorithm Based on Neural Network Prediction for Agent Trajectory Tracking 338
Junhua Gu, Wei Liu, Xiaoyuan Zheng, Hongpu Liu

A Novel Evolutionary Constrained Multi-Objective Optimization Method for Identifying Personalized Drug Targets Combining with Structural Network Control Principles 344
Jing Liang, Zhuo Hu, Zong-Wei Li, Ying Bi, Han Cheng, Wei-Feng Guo

Online Calibration of Instrument Transformers Considering the Time-Varying Impedance of Transmission Lines 351
Zihan Gao, Chuanji Zhang, Cheng Cheng, Cheng He, Hongbin Li

Two-Archive-Based Competitive Swarm Optimizer for Constrained Multiobjective Optimization 357
Lianghao Li, Cheng He, Jianqing Lin, Linqiang Pan

Impact of Spatial Encoding Methods on Differential Evolution: A Case Study on Non-Contact Current Measurement 363
Yonglin He, You Wu, Cheng He, Hongbin Li, Chaojun Ma

Voltage Transformer Anomaly Detection Using LSTM Based Autoencoder 369
Xin Yan, Cheng He, Jing Yin, Chuanji Zhang, Hongbin Li

Spatial-Temporal Attention Graph WaveNet for Traffic Forecasting 375
Shixuan Liu, Jijun Zhu, Wei Lei, Ping Zhang

MOEMT-RPA: Reference Point-Assisted Explicit Multi-Objective Evolutionary Multi-Task Algorithm 383
Shaojin Geng, Wuzhao Li, Jiwei Tu, Dongyang Li, Weian Guo, Lei Wang, Qidi Wu

Aspect-Based Sentiment Analysis Using Local Context Focus Mechanism with DeBERTa 391
Tianyu Zhao, Junping Du, Yingxia Shao, Ang Li

Q-Learning Based Adaptive Flow Control 397
Xiaoping Zhang, Yunlan Wang, Tianhai Zhao, Shuai Hu, Hui Zhang

A Particle Swarm Optimization with Dynamic Strategy for Multi-Modal Multi-Objective Location Optimization Problem 403
Youwei Sun, Juan Shen, Xiaohong Zhang, Chaoli Sun

Relation Extraction Model Based on Semantic Enhancement Mechanism 409
Peiyu Liu, Junping Du, Yingxia Shao, Zeli Guan

Multi-Hop Reasoning of Temporal Knowledge Graph Based on Reinforcement Learning 416
Qi Wang, Lei Chen, Lin Yang, Ming Wang

The Adaptive Search Strategy Selection Based on the Guide of Two Learning Mechanisms for High-Dimensional Expensive Problems 424
Yiyun Gong, Li Kang, Gangzhu Qiao, Dongpeng Guo, Haibo Yu, Jianchao Zeng

Brain Death Determination Aid System Using Automatic D-2TEMD 431
Ran Zhang, Linfeng Sui, Boning Li, Jinmin Gong, Chengyuan Shen, Jianting Cao

Many-Objective Evolutionary Optimization Algorithm Based on Single Objective Population Distribution Characteristics 437
Huiting Mao, Xuhua Shi, Bin Zhang

Link Constraint Reliability Learning for Semi-Supervised Community Detection 445
Zhuanlian Ding, Lve Cao, Dengdi Sun

Adaptive Optimal Control of Discrete-Time Linear Systems with Discounted Value: Off-Policy Reinforcement Learning 453
Liao Zhu, Chunxiuzi Liu, Jingsheng Xu, Ping Guo

Cross-Layer Feature Fusion Vision Transformer for Fine-Grained Visual Classification 459
Ke Zhang, Jian Cao, Hai-Sheng Li, Qiang Cai

A New Expected Improvement Acquisition Function for Expensive Multi-Objective Optimization..... 465
Xilu Wang, Yaochu Jin

Author Index