2021 IEEE 24th International Conference on Computer Supported Cooperative Work in Design (CSCWD) | 978-1-7281-6597-4/21/$31.00 ©2021 IEEE | DOI: 10.1109/CSCWD49262.2021.9437777

Table of Contents

Keynote Abstracts

Mobile Robots in Particle Swarm Optimizers: A Novel Paradigm for Effective Swarm Optimization and Collaboration i
MengChu Zhou

Towards Community-Oriented Wearable Computing Systems: A Paradigm Shift to Monitor and Control Cooperative Groups of People based on Collectives of Wearables ii
Giancarlo Fortino

E-CARGO and Role-Based Collaboration iii
Haibin Zhu

Scholar Social Networks and Big Data Research iv
Yong Tang

Regular Papers

Conversational Agents for Elderly Interaction 1
Noemi da Paixão Pinto, Juliana Baptista dos Santos França, Henrique Prado de Sá Sousa, Adriana Santarosa Vivacqua and Ana Cristina Bicharra Garcia

Modeling and Analysis for Tracing System of Agricultural Products Based on Colored Petri net 7
Miao Wang and Ruizhi Sun

Runtime Verification of Multi-Agent Self-Adaptive System 12
Xingyu Ye, Wei Liu and Ning Wang

Adaptive Intervention for Crowd Negative Emotional Contagion 18
Yepeng Shi, Guijuan Zhang, Dianjie Lu, Lei Lv and Hong Liu

An Agent-Based Approach for Dynamic Scheduling in Hybrid Flow Shops 24
Xiyao Zhang, Xueyan Sun, Youshan Liu, Chunjiang Zhang, Linlin Zhao and Weiming Shen

Amazon Spot Instance Price Prediction with GRU Network 31
Dawei Kong, Shijun Liu and Li Pan

Method Towards Service Composition Optimization on Cost-Effective Using Mixed Flower Pollination Algorithm 37
Jiakai Wu and Wenan Tan

Personalized and Quality-Aware Task Recommendation in Collaborative Crowdsourcing 43
Kun Lu, Jiaxi Wang, Mingchu Li and Zhiheng Zhang

Towards Tunable RDMA Parameter Selection at Runtime for Datacenter Applications 49
Kai Wang, Fang Dong, Dian Shen, Chengtian Zhang, Jinghui Zhang and Junzhou Luo

Quality of Service Aware Cost Optimization for Online Gaming Services in IaaS Clouds 55
Yongqiang Gao, Wenhui Guo and Chenyang Zhou

Scheduling microservice-based workflows to containers in on-demand cloud resources 61
Wenzheng Li, Xiaoping Li and Rubén Ruiz

NH-CIL: A Nested Hierarchy Algorithm for Class Incremental Learning 67
Mingyu Liu and Yijie Wang

RAOA: A Relay-Assisted Offloading Approach in Edge Computing Environment 73

Song Zhang, Xutong Jiang, Jiabang Liu, Lianyong Qi and Wanchun Dou

Task Offloading Algorithms for Novel Load Balancing in Homogeneous Fog Network 79
Jiaquan Yan, Jigang Wu, Yalan Wu, Long Chen and Shuangyin Liu

An algorithm based on monarch butterfly optimization with learning mechanism and topological structure 85
Fuqing Zhao, Songlin Du, Jianxin Tang, Yi Zhang and Weimin Ma

Backtracking Search Algorithm based on Knowledge of Different Populations for Continuous Optimization Problems 90
Fuqing Zhao, Jinlong Zhao, Xiaotong Hu, Yi Zhang and Weimin Ma

A Novel Surrogate-guided Jaya Algorithm for the Continuous Numerical Optimization Problems 96
Fuqing Zhao, Ru Ma, Jianxin Tang, Yi Zhang and Weimin Ma

Information Entropy-Based Density Clustering Algorithm of Database Log 102
Zongshui Xiao, Lanju Kong, Baochen Zhang, Jin Qian and Fuqi Jin

Deep reinforcement learning visual navigation model integrating memory-prediction mechanism 109
Qian Xiao, Pengfei Yi, Rui Liu, Jing Dong, Dongsheng Zhou and Qiang Zhang

Examining Data and Process of Procuratorial Cases: A Graph-Based Provenance Solution Across Instances 115
Hanyu Wu, Tun Lu, Xianpeng Wang, Baoping Yang, Chunlin Xu and Peng Jiang

Collaboration Awareness Exploration through Visual Analysis of Group Traces 121
Qiang Li, Yeqian Yuan, Zhi Li and Mingjuan Ma

An Elaborate Container Cascade Fault Detection Strategy Based on Spatio-Temporal Correlation Model and Co-Optimization 127
Qingwei Zhong, Ningjiang Chen, Linming Lian and Xuyi Yao

Implementation of a System for Cohesive and Secure Community Management 133
Jordan Lloyd and Rachid Anane

Toward Lifetime Learning-based Predictive Modeling 139
Chunsheng Yang, Yuhong Guo, Yubin Yang and Xiaohui Yang

Research on Explainable Artificial Intelligence Techniques: A User Perspective 144
Fábio Daudt, Daniel Cinalli and Ana Cristina B. Garcia

AuthCrowd: Author Name Disambiguation and Entity Matching using Crowdsourcing 150
Antonio Correia, Diogo Guimaraes, Dennis Paulino, Shoaib Jameel, Daniel Schneider, Benjamim Fonseca and Hugo Paredes

Density Weighted Diversity Based Query Strategy for Active Learning 156
Tingting Wang, Xufeng Zhao, Qiujian Lv, Bo Hu and Degang Sun

TSAR-based expert recommendation mechanism for community question answering 162
Jian Song, Xiaolong Xu and Xinheng Wang

An Efficient Method Based on Label Propagation for Overlapping Community Detection 168
Zhikang Tang, Chunying Li and Yong Tang

TEA-RNN: Topic-Enhanced Attentive RNN for Attribute Inference Attacks via User Behaviors 174
Yifei Zhang, Jiong Wang, Junsha Chen, Neng Gao, Min Li and Jiameng Bai

Potential User Prediction for Financial APP Based on Random Forest Model 180
Yang Gao and Jing Liu

Variable-Length Metric Learning for Fast Image Retrieval 186

Yujie Hu, Hanjiang Lai and Yan Pan

An Efficient Long Chinese Text Sentiment Analysis Method Using BERT-Based Models with BiGRU 192
Deming Sheng and Jingling Yuan

Multi-resolution Odd Sketch for Mining Jaccard Similarities between Dynamic Streaming Sets 198
Qingjun Xiao, Lin Wen and Quanwei Zhang

Latent Clues Investigation in Discipline Inspection and Supervision Based on Knowledge Graph Analysis 204
Yang Gao and Jing Liu

Imbalanced Fault Diagnosis Based on Particle Swarm Optimization and Sparse Auto-Encoder 210
Peng Peng, Wenjia Zhang, Yi Zhang, Hongwei Wang and Heming Zhang

Region-aware POI Recommendation with Semantic Spatial Graph 214
Jiakai Tang, Jiahui Jin, Zijia Miao, Binjie Zhang, Qi An and Jinghui Zhang

Energy-Efficient Scheduling of MapReduce Tasks Based on Load Balancing and Deadline Constraint in Heterogeneous Hadoop YARN Cluster 220
Yongqiang Gao and Chong Huang

Joint discriminative distribution adaptation and manifold regularization for unsupervised domain adaptation 226
Wei Zhang, Cheng Li and Shaohua Teng

Visual analysis system for association-based outlier detection for data streams 232
Xiaochen Shi, Saihua Cai, Sicong Li and Ruizhi Sun

A Data-driven Decision-making Approach for Complex Product Design Based on Deep Learning 238
Zou Lai, Siqin Fu, Hang Yu, Shulin Lan and Chen Yang

Exploring Development-related Factors Affecting the Popularity of Open Source Software Projects 244
Sha Jiang, Jian Cao and Qing Qi

Cloud-based lightweight collaborative editing algorithm for mobile devices 250
Xiao Lv, Fazhi He, Jiacun Yuan, Weiwei Cai and Yuan Cheng

Paper recommendation based on author-paper interest and graph structure 256
Hao L, Shijun Liu and Li Pan

A Method For Extracting Unstructured Threat Intelligence Based On Dictionary Template And Reinforcement Learning 262
Xuren Wang, Rong Chen, Binghua Song, Jie Yang, Zhengwei Jiang, Xiaoqing Zhang, Xiaomeng Li and Shengqin Ao

Predicting design conflicts using declarative language approach 268
Yuan Cheng, Fazhi He and Xiao Lv

Distributed Collaborative Simulation Middleware Based on Reflective Memory Network 274
Linzhi Shan and Hongbo Sun

Regulatory Challenges and Mitigation for Account Services Offered by FinTech 280
Abhishek Mahalle, Jianming Yong and Xiaohui Tao

Challenges and Opportunities for Application Deployment over SaaS Platform in Banking and Financial Services Industry 288
Abhishek Mahalle, Jianming Yong and Xiaohui Tao

Requirements Elicitation for Collaborative Systems: A Systematic Review 297
Maximiliano Canche and José A. Pino

Coordination in crowdsourced software development: a systematic mapping study 305
Vitor Queiroz de Campos, José Maria N. David and Regina Braga

Scientometric Research Assessment of IEEE CSCWD Conference Proceedings: An Exploratory Analysis from 2001 to 2019 311
António Correia, Dennis Paulino, Hugo Paredes, Benjamim Fonseca, Shoaib Jameel, Daniel Schneider and Jano de Souza

LDoS Attack Detection Using PSO and K-means Algorithm 317
Siyuan Wang, Dan Tang, Yu Liu, Jingwen Chen, Yudong Yan and Jiayi Zhang

A Collaboration Multi-Domain Sentiment Classification on Specific Domain and Global Features 323
Junping He, Shaohua Teng, Lunke Fei, Xiaozhao Fang and Wei Zhang

Where is our data? A Blockchain-based Information Chain of Custody Model for Privacy Improvement 329
Wagner Silva and Ana Cristina Bicharra Garcia

DeepMIT: A Novel Malicious Insider Threat Detection Framework based on Recurrent Neural Network 335
Degang Sun, Meichen Liu, Meimei Li, Zhixin Shi, Pengcheng Liu and Xu Wang

Network data classification mechanism for intrusion detection system 342
Shuai Jiang and Xiaolong Xu

Modeling Password Guessability via Variational Auto-Encoder 348
Jinwei Wang, Yong Li, Xi Chen and Yongbin Zhou

Spear Phishing Emails Detection Based on Machine Learning 354
Xiong Ding, Baoxu Liu, Zhengwei Jiang, Qiuyun Wang and Liling Xin

Preserving Privacy for Discrete Location Information 360
Kai Dong, Zhenyuan Tao, Xiangyu Xia, Zhouguo Chen and Ming Yang

802.11ac Device Identification based on MAC Frame Analysis 366
Xiaolin Gu, Wenjia Wu, Zhouguo Chen, Aibo Song, Zhen Ling and Ming Yang

Asymmetric Anomaly Detection for Human-Robot Interaction 372
Hao Lv, Pengfei Yi, Rui Liu, Yingkun Hou, Dongsheng Zhou, Qiang Zhang and Xiaopeng Wei

EZAC: Encrypted Zero-day Applications Classification using CNN and K-Means 378
Yan Li, Yifei Lu and Shuren Li

Producing More with Less: A GAN-based Network Attack Detection Approach for Imbalanced Data 384
Xingran Hao, Zhengwei Jiang, Qingsai Xiao, Qiuyun Wang, Yepeng Yao, Baoxu Liu and Jian Liu

Modeling Attackers Based on Heterogenous Graph through Malicious HTTP Requests 391
Shengqin Ao, Yitong He, Ning Luo, Xuren Wang, Zhengwei Jiang and Jun Jiang

Attributed Heterogeneous Graph Neural Network for Malicious Domain Detection 397
Shuai Zhang, Zhou Zhou, Da Li, Youbing Zhong, Qingyun Liu, Wei Yang and Shu Li

A Method for Protecting Private Data in IPFS 404
Yufei Lin and Chongyang Zhang

Trust-Aware Service Chaining in Mobile Edge Clouds with VNF Sharing 410
Zhiheng Zhang, Zichuan Xu, Guowei Wu, Jiaxi Wang, Haozhe Ren and Guochang Yuan

CallChain: Identity Authentication Based on Blockchain for Telephony Networks 416
Ya Chen, Yazhe Wang, Yu Wang, Mingxuan Li, Guochao Dong and Chao Liu

A Framework for Document-level Cybersecurity Event Extraction from Open Source Data 422
Ning Luo, Xiangyu Du, Yitong He, Jun Jiang, Xuren Wang, Zhengwei Jiang and Kai Zhang

PPNS: A Privacy-Preserving Node Selection Scheme in Crowdsensing Based on Blockchain 428
Jian An, Zhenxing Wang, Xin He and Xiaolin Gui

Application of Sequence Embedding in Host-based Intrusion Detection System 434
Yijun Lu and Shaohua Teng

Priority and Dependency-Based DAG Tasks Offloading in Fog/Edge Collaborative Environment 440
Xing Fu, Bing Tang, Feiyan Guo and Linyao Kang

Multi-Controller Deployment Strategies Based on Node Weight and Request Flow in Distributed Software Defined Networks 446
Yuhan Dong, Boyu Li, Bin Wu and Meiqi Feng

BEIR:A Blockchain-based Encrypted Image Retrieval Scheme 452
Xianxian Li, Jie Li, Feng Yu, Xuemei Fu, Junhao Yang and Yue Chen

An Online Fault Tolerance Server Consolidation Algorithm 458
Boyu Li, Yuhan Dong, Meiqi Feng and Bin Wu

Blockchain based Secure Data Sharing Model 464
Shi Wang and Jing Liu

PipePar: A Pipelined Hybrid Parallel Approach for Accelerating Distributed DNN Training 470
Jiange Li, Yuchen Wang, Jinghui Zhang, Jiahui Jin, Fang Dong and Lei Qian

Exploring the Construction of Innovative Educational Ecosystem Based on the "Internet + Educational Crowd Funding" 476
Xuesong Zhai, Xiaoyan Chu and Yan Li

Investigation of College Teachers' TPACK Level During the Epidemic Situation: Taking Chu Kochen Honors College, Zhejiang University as an Example 480
Yan Li, Xinya Chen, Yixuan Chen, Fan Zhang and Marwan H. Sallam

How Learning Style and Social Media Behaviour Influence Undergraduates' Information Literacy Level in China 485
Wei Xu and Zhi-Yi Shen

Research on Learning Design Mode and Practice in the Context of Large-scale Online Teaching 493
Hui Fang, Qiang Jiang and Wei Zhao

Path Analysis of Online Learning Behavior Based on Whole Brain Mode 498
Ruiming Liang, Qiang Jiang, Baoxia Jian and Wei Zhao

Perception of Students' Learning Experience on An Online Course Designed by APT Model during COVID-19 Outbreak 504
Yanli Wang, Yun Cheng and Jiarui Yang

The Effect of PowerPoint Theme Color on Learners' Learning Effectiveness and Emotions 510
Wenya Yang, Qing Li and Xue Wang

Research on the Impacts of Feedback in Instructional Videos on College Students' Attention and Learning Effects 513
Xin Lu, Qing Li and Xue Wang

New Progress and Enlightenment for the Study on Knowledge Building in Taiwan in the Past Two Decades——Based on Systematic Literature Method 517
Wenjing Ban, Qiong Hu, Xinquan Jin, Qiang Jiang and Wei Zhao

The Learning Effects of Collaborative Knowledge Construction: A Meta-analysis of 16 Experiments 521
Qiong Hu, Wenjing Ban, Yue Li, Qiang Jiang and Wei Zhao

An Empirical Study on the Influence of Co-regulation on Deep Learning under Crowdsourcing Knowledge Construction 526
Yue Li, Xinquan Jin, Qiong Hu, Qiang Jiang, Wei Zhao and Mohamed Oubibi

Empirically Analysing Knowledge Generation Framework in Student Homophily Through Crowdsourcing 531
Xinquan Jin, Yue Li, Wenjing Ban, Qiang Jiang, Wei Zhao and Mohamed Oubibi

The more complex the feedback, the better? A study on the design of feedback types in educational games 536
Zheyu Liu, Weilan Zhou, Jihui Zhou, Jianqing Gao, Kunchen Guo and Weijin Cui

Revising Portfolio with Preferences via Higher-Order Group Multi-Role Assignment 540
Jinhao Qi, Hainbin Zhu, Jiamin Xiang and Dongning Liu

A New Insight in Medical Resources Scheduling of Physical Examination with Adaptive Collaboration 546
Wei Zhang, Wenda Li, Shaohua Teng and Dongning Liu

Evaluating the Communication Efficiency in Federated Learning Algorithms 552
Muhammad Asad, Ahmed Moustafa, Takayuki Ito and Muhammad Aslam

Toward Agent-based Interactive Systems to Support Rehabilitation Process 558
Tagy Aldeen Mohamed, Ahmed Mustafa, Takayuki Ito and Muhammad Asad

Crowd Evacuation Simulation Using Hierarchical Deep Reinforcement Learning 563
Zheng Zhang, Dianjie Lu, Jialiuyuan Li, Pingshan Liu and Guijuan Zhang

Obstacle Judgment Model of In-vehicle Voice Interaction System Based on Eye-tracking 569
Xiangyuan Yan, Wenjun Hou and Xiaoqing Xu

A Prospect Theory-Based Three-Way Conflict Analysis Approach for Agent Evaluation 575
Tianxing Wang, Huaxiong Li, Wenting Hu and Libo Zhang

Achieve Better Endorsement Balance On Blockchain Systems 581
Chao Liu, Mingxuan Li, Yazhe Wang, Yu Wang, Dongdong Huo and Ya Chen

A Three-Way Human-Robot Task Assignment Method under Intuitionistic Fuzzy Environment 587
Libo Zhang, Cong Guo, Linxia Zhang and Yin Sheng

Design of virtual intelligent parking lot system based on signal request mechanism 593
Shiduo Ning, Jiang Zhong and Xiaojun Zheng

Estimating Memory Retention Traces of Foreign Language Vocabulary from Reading Interaction Data 598
Carlos Pérez-Guerra and Jian Cao

An Instrument to Define the Product Scope at Pre-selling Time 604
Tomás Vera, Daniel Perovich and Sergio F. Ochoa.

CSFQGD: Chinese Sentence Fill-in-the-blank Question Generation Dataset for Examination 609
Tianlin Zhang, Zhenyu Cui, Jiaxu Leng and Ying Liu

The Influence of Contributor Sentiment on Willingness to Contribute Knowledge in Open Source Product Community 614
Shilin Xie and Xiaodong Zhang

Incorporating Attributes Semantics into Knowledge Graph Embeddings 620
Mingyang Li, Neng Gao, Chenyang Tu, Jia Peng and Min Li

Knowledge Base Question Answering for Intelligent Maintenance of Power Plants 626
Qi Li, Yufei Zhang and Hongwei Wang

A Knowledge Mining Algorithm for E-Courseware Based on Query Likelihood Model 632
Yan Wang, Hong Liu, Hao Yu and Chen Han

Constructing Digital Twin for Smart Manufacturing 638
Hao Qin, Hongwei Wang, Yu Zhang and Libin Lin

Zero-Shot Learning Based on Knowledge Sharing 643
Ting Zeng, Hongxin Xiang, Cheng Xie, Yun Yang and Qing Liu

Keystroke Dynamics Based User Authentication and its Application in Online Examination 649
Zhaohang Chen, Hongming Cai, Lihong Jiang, Wendong Zhu, Wenyun Zou and Xiang Fei

Tacit Knowledge Representation and Classification Based on Statistical Data for Production Process 655
Qihao Wan, Heming Zhang and Yiran Wang

Knowledge Graph Construction and Decision Support Towards Transformer Fault Maintenance 661
Xiaoying Liu and Hongwei Wang

Dynamic design of the turbomachinery blade with the joint application of the newly developed constrained zone and the PSO algorithm 667
Yeming Lu, Haoran Liu, Xiaofang Wang, Yingyue Li and Yongqi Yan

Adaptive Video Streaming Using Dynamic Server Push over HTTP/2 673
Shouqin Huang, Zhiwen Wang, Weizhan Zhang, Haipeng Du and Qinghua Zheng

Elitist Guided Parameter Adaptive Brain Storm Optimization Algorithm 679
Fuqing Zhao, Xiaotong Hu, Jinlong Zhao and Huan Liu

A novel feature selection with many-objective optimization and learning mechanism 684
Lingxuan Shu, Fazhi He, Xun Hu and Haoran Li

A CPU Load-awared Virtual Router Placement Strategy in Cloud Network 690
Mingxuan Yang, Fang Dong, Dian Shen, Yi Zhai and Ciyuan Chen

An Improved Adaptive Differential Evolution Approach for Constrained Optimization Problems 696
Wenchao Yi, Hongbin Qiu, Yong Chen, Jiansha Lu, Zhi Pei and Chunjiang Zhang

Multi-objective Robust Optimization of EMU Brake Module 702
Ziqiang Sheng, Yonghua Li and Shanshan Shi

A Simulated Annealing Genetic Algorithm for Logistics Distribution Problem in Community Scenario 708
Yifan Yang, Jie Zhu, Haiping Huang and Yixuan Li

Using bidirectional GAN with improved training architecture for imbalanced tasks 714
Wenjia Zhang, Peng Peng and Heming Zhang

Ant Colony Optimization for UAV-based Intelligent Pesticide Irrigation System 720
Zhikai Gao, Jie Zhu, Haiping Huang, Yifan Yang and Xudong Tan

An Orthogonal Learning Design Whale Optimization Algorithm with Clustering Mechanism 727
Fuqing Zhao, Haizhu Bao and Huan Liu

A Novel Fruit Fly Opimization Algorithm with Vison Scanning Search and Extensive Learning Mechanism 733
Fuqing Zhao, Ruiqing Ding, Jianxin Tang and Huan Liu. David and Michael Bauer

Identifying and Recommending Experts Using a Syntactic-Semantic Analysis Approach 739

Tales Lopes, Victor Ströele, Regina Braga, José Maria N

A service to support pragmatic interoperability in IoT ecosystems 745
Matheus H.S. Muniz, José Maria David, Regina Braga, Fernanda Campos and Victor Ströele

Ontology-based semantic similarity in generating context-aware collaborator recommendations 751
Siying Li, Marie-Helene Abel and Elsa Negre

TCO : a Teacher Context Ontology 757
Nader N. Nashed, Christine Lahoud and Marie-Hélène Abel

A Deep Neural Network Approach Using Convolutional Network and Long Short Term Memory for Text Sentiment Classification 763
Teragawa Shoryu, Lei Wang and Ruixin Ma

Grace: An Efficient Parallel SPARQL Query System over Large-Scale RDF Data 769
Xiang Kang, Yuying Zhao, Pingpeng Yuan and Hai Jin

Towards a taxonomy for ranking knowledge in Internet of Everything 775
Viviane Cunha Farias da Costa, Luiz Oliveira and Jano de Souza

A Text Similarity-based Protocol Parsing Scheme for Industrial Internet of Things 781
Xiaoyu Jiang, Tie Qiu, Jiancheng Chi, Bin Zhang, Ximin Sun and Xiaobo Zhou

A Queue Hybrid Neural Network with Weather Weighted Factor for Traffic Flow Prediction 788
Fengman Miao, Long Tao, Jianbin Xue and Xijun Zhang

A Quality Assessment Model for Blockchain-Based Crowdsourcing System 794
Tianyi Xu, Haoran Sun, Zongyuan Su, Jianrong Wang, He Liu and Tie Qiu

Recruiting MCS Workers Strategy with Non-Fixed Reward in Social Network 800
Zehao Zhao, Chaokun Zhang, Tie Qiu and Keqiu Li

A Multi-Target Track Association Algorithm in Underwater Multi-Sensors Environments 806
Yan Chu, Kezhi Wang, Lina Wang and Shengdong Qu

Blockchain Based Data Protection Framework for IoT in Untrusted Storage 813
Tianyi Xu, Zhao Fu, Mei Yu, Jianrong Wang, Hongwei Liu and Tie Qiu

DDCA: A Dynamic Data Collection Algorithm in Mobile Underwater Wireless Sensor Networks 819
Xiaoyun Guang, Wenyu Qu, Chunfeng Liu and Tie Qiu

Cooperative Depth Rotation to Avoid Energy Hole for 3D Underwater Sensor Networks 825
Gaotao Shi, Kai Liu and Jia Zeng

A Novel Particle Swarm Optimization Algorithm for k-Coverage Problems in Wireless Sensor Networks 831
Yingbo Zhang, Weiming Shen

Study on Typical Objects Three-Dimensional Modeling And Classification Technology Based on UAV Image Sequence 837
Huan Yang, Yangming Guo, Zongmin Jiang, Xiaodong Wang, Zhuqing Wang and Mingming Liu

Communicate with traffic lights and vehicles based on multi-agent reinforcement learning 843
Qiang Wu, Peng Zhi, Liang Zhang, Jianqing Wu, Qingguo Zhou, Qiang Zhou, Pengfei Gao and Yongqiang Wei

Selection Biased Positive and Unlabeled Learning Method for Anomaly Detection in Surveillance Videos 849
Feiyu Shang, Huiyu Mu, Shanshan Qi and Ruizhi Sun

A Blockchain-based Crowdsourcing System for Large Scale Environmental Data Acquisition 855
Ke Cheng, Siyi Quan and Jiaqi Yan

Prospective on eye-tracking-based studies in immersive virtual reality 861
Fan Li, Ching-Hung Lee, Shanshan Feng, Amy Trappey and Fazal Gilani

A Virtual Reality-based Spoken English Learning Platform 867
Xin Lian, Chengyao Wang, Canbiao Zhuang, Pak Ki Kwok and Mian Yan

PCB Defect Detection Using Deep Learning Methods 873
Xing Wu, Yuxi Ge, Qingfeng Zhang and Dali Zhang

Human Cognition to Analyse Alcohol Use Disorder and Correlation with Internet Gaming Disorder 882
Hari Mohan Pandey and Abhishek Jain

Human Cognitive Features to Define Correlation Between Depression and Internet Gaming Disorder 888
Hari Mohan Pandey and Abhishek Jain

Crowdsourcing Urban Narratives for a Post-Pandemic World 894
Ramon Chaves, Daniel Schneider, Claudia Motta, António Correia, Hugo Paredes, Bárbara Caetano and Jano Moreira de Souza

HDQGF:Heterogeneous Data Quality Guarantee Framework Based on Deep Learning 901
Yun Zhang, Zongze Jin, Weilin Zhu, Lei Chi and Weiping Wang

A Novel Trojan Attack against Co-learning Based ASR DNN System 907
Mingxuan Li, Xiao Wang, Dongdong Huo, Han Wang, Chao Liu, Yazhe Wang, Yu Wang and Zhen Xu

Optimal Open Space Cubicle Assignment Considering Personal Thermal Preferences 913
Shiqi Lei and Weiming Shen

Do You Really Understand What I Mean? A Visual Representation of Micro-operation Intention 919
Zhuo Wang, Yang Wang, Xiaoliang Bai, Shusheng Zhang, Weiping He and Xiangyu Huo

Effects of crosswind on the aerodynamic characteristic of high-speed pantograph 925
Dongping Wang, Chenglong Sun, Yajun Zhao and Sijun Huang

Research on the Influence of Vacuum Pipe Blocking Ratio on the Aerodynamic Characteristics of Super High Speed Train 931
Tian Sang, Chong Su and Xiaozhen Mi

A biased random key heuristic genetic approach for the payload packing design of a satellite module 936
Ziqiang Li, Wenqian Ruan and Yu Kang

A Survey of V2X Testing for Cooperative Connected and Automated Mobility 942
Zihui Zhang, Liangjie Yu, Xinjian Fan, Lei Wang and Yanqiang Li

Research on Flexibility of Production System Based on Personnel Collaboration 947
Dawei Ren, Xiaodong Zhang and Zehua Bi

An Aero-Engine RUL Prediction Method Based on VAE-GAN 953
Yuhuai Peng, Xiangpeng Pan, Shoubin Wang, Chenlu Wang, Jing Wang and Jingjing Wu

Human-robot interaction method combining human pose estimation and motion intention recognition 958
Yalin Cheng, Pengfei Yi, Rui Liu, Jing Dong, Dongsheng Zhou and Qiang Zhang

Analysis of Temperature Field and Thermal Stress for High Speed Train Brake Disc 964
Xiaozhen Mi, Chong Su, Mingming Jiang and Mingze Chu

A Discrete Grey Wolf Optimizer for Solving Flexible Job Shop Scheduling Problem with Lot-streaming 969
Chunjiang Zhang, Kaixin Wang, Qingji Ma, Xinyu Li and Liang Gao

Reinforcement Learning based Optimization for Cobot's Path Generation in Collaborative Tasks 975
Shirine El Zaatari, Yuqi Wang and Weidong Li

A Modified Genetic Algorithm for Distributed Hybrid Flowshop Scheduling Problem 981
Xueyan Sun, Weiming Shen and Bingyan Sun

A bacterial foraging optimization algorithm for user interface layout design in complex human-computer interaction system 987
Xinyan Li, Yan Cui, Nianfu Jin, Jin Su, Fengying Pang and Ming Gao

Research on Tasks Scheduling Model based on Awareness-Control Resource of the Vehicle Crew 991
Zhanhua Yang, Jin Su, Wang Chen and Xiwen Shang

Unmanned Cranes Scheduling and System Implementation of a CPS-based Steel Slab Yard 997
Yueyong Liang, Gongzhuang Peng, Youqi Wu and Geng Yang

Automatic Classification and Coding of Low-Level Events In Nuclear Power Plants Based on Machine Learning 1003
Lian Zhang, Hankun Cai, Meng Yang and Qiang Yang

FenceBot: An elderly tracking app for mitigating health risk contacts 1009
Jobson Massollar and Ana Cristina Bicharra Garcia

A New k-Nearest Neighbors Algorithm for Learning from Multiple Experts' Uncertain Decisions 1015
Zhengfei Shen, Jian Cao, Nengjun Zhu and Xiaosong Chen

A Novel Key Point Trajectory Model for Fall Detection from RGB-D Videos 1021
Cuiwei Liu, Jianxiong Lv, Xiaoxue Zhao, Zhaokui Li, Zhuo Yan and Xiangbin Shi

Behavior Analysis and Prediction of Disabled in Smart Home 1027
Peng Liu, Tun Lu and Ning Gu

A private Statistic Query Scheme for Encrypted Electronic Medical Record System 1033
Xianxian Li, Xuemei Fu, Feng Yu, Zhenkui Shi, Jie Li and Junhao Yang

Design Considerations for Information Collaboration in Long-term Senior Care System 1040
Qingyu Xu, Yuling Sun and Liang He

Incorporating Background Knowledge into Dialogue Generation using Multi-task Transformer Learning 1046
Yiming Yuan and Xiantao Cai

Time-aware Neural Collaborative Filtering with Multi-dimensional Features on Academic Paper Recommendation 1052
Yibo Lu, Yi He, Yixiang Cai, Zelin Peng and Yong Tang

Semi-automatic Scholar Encyclopedia Generating System Based on Scholar Social Network 1058
Chao Chang, Qiang Xu, Yaoxing Wu, Jianguo Li, Jia Zhu and Yong Tang

Graph Attention Autoencoder for Collaborative Pair-wise Ranking 1063
Nan Mu, Daren Zha, Yuanye He and Lin Zhao

An Improved Community Detection Algorithm via Fusing Topology and Attribute Information 1069
Qing Xu, Lunjie Qiu, Ronghua Lin, Yong Tang, Chaobo He and Chengzhe Yuan

Learning from Audience Interaction: Multi-Instance Multi-Label Topic Model for Video Shots Annotating 1075
Zehua Zeng, Neng Gao, Cong Xue, Yuanye He and Xiaobo Guo

Influence Model of Paper Citation Networks with Integrated Weighted PageRank and HITS 1081
Yue Lu, Kun Ma and Jidong Duan

Social Recommendation Combining Implicit Information and Rating Bias 1087
Weizhi Ying, Qing Yu and Zuohua Wang

Sentiment Evolution in Social Network Based on Joint Pre-training Model 1093
Xiaocao Wang, Chunjing Han, Jingyuan Hu, Xiaodan Zhang, Honglei Lv and Shaoqin Huang

Information Diffusion Prediction via Dynamic Graph Neural Networks 1099
Zongmai Cao, Kai Han and Jianfu Zhu

First-order and High-order Information Fusion over Heterogeneous Information Network for Top-N Recommendation System 1105
Nan Mu and Daren Zha

Gated Knowledge Graph Neural Networks for Top-N Recommendation System 1111
Nan Mu, Daren Zha and Rui Gong

An Adaptive Ant Colony Algorithm for Autonomous Vehicles Global Path Planning 1117
Yanqiang Li, Yu Ming, Zihui Zhang, Weiqi Yan and Kang Wang

Study on Multi-Vehicle Scheduling Problem 1123
Jian Wang, Wei Yang, Boqiang Li and Liusheng Huang

An Adaptive Car-Following Strategy for Vehicle Platooning Control 1129
Yanjun Shi, Tao Li and Qiaomei Han

Working with Few Samples: Methods that Help Analyze Social Attitude and Personal Emotion 1135
Mengwen Liang, Jie Zhou, Yuling Sun and Liang He

HSRF: Community Detection Based on Heterogeneous Attributes and Semi-Supervised Random Forest 1141
Zijing Fan, Chao Yuan, Liling Xin, Xuren Wang, Zhengwei Jiang and Qiuyun Wang

Understanding the User Interactions on GitHub: A Social Network Perspective 1148
Erzheng Fu, Yingqiu Zhuang, Jianxi Zhang, Jiayun Zhang and Yang Chen

A Review Construction-based Approach to Collaborative Filtering 1154
Bo Yang, Hui Liu, Jicheng Lei, Dongsheng Li and Peng Wang

Incorporating Domain Knowledge and Semantic Information into Language Models for Commonsense Question Answering 1160
Ruiying Zhou, Keke Tian, Hanjiang Lai and Jian Yin

MidiPGAN: A Progressive GAN Approach To MIDI Generation 1166
Sebastian Walter, Guillaume Mougeot, Yan Sun, Lihong Jiang, Kuo-Ming Chao and Hongming Cai

Discovering Adverse Drug Reactions from Twitter: a sentiment analysis perspective 1172
Luiz A. P. A. Ribeiro, Ana Cristina Bicharra Garcia and Daniel Cinalli

Assessing the Quality of Local E-government Service Through Citizen-Sourcing Applications 1178
Mateus de Souza Monteiro, Leonardo Vasconcelos, José Viterbo, Luciana Cardoso de Castro Salgado and Flávia Bernardini

The use of social news curation to empower citizens and journalists: findings of a focus group study with professional curators 1184
Daniel Schneider, António Correia and Jano Moreira de Souza

A Recommendation Approach to Diversify the Collaboration Scenario in Global Software Development Contexts 1191
Tales Lopes, Victor Ströele, Regina Braga, José Maria N. David and Fernanda Campos

Supporting Collaboration with Forgetting Curves 1197

Hector N. Melo, Jessica P. Silvério, Juliana B. S. França, Angélica F. S. Dias, Adriana S. Vivacqua and Marcos R. S. Borges

Automatic prediction of stock market behavior based on time series, text mining and sentiment analysis: A systematic review 1203
Noemi Pinto, Luciano da Silva Figueiredo and Ana Cristina Garcia

COVID-19 as Opportunity to Test Digital Nomad Lifestyle 1209
Marcos Antonio de Almeida, António Correia, Daniel Schneider and Jano Moreira de Souza

A Cluster Representative Selection Method for Stock Portfolio Based On Efficient Frontier 1215
Yahui Lu, Minghao Li, Xiaochu Tang and Hui Wang

ProvSum4MC: A Novel Provenance Summarization Approach for Multidisciplinary Collaboration 1221
Beisi Zhou, Tun Lu, Fangyu Yu, Peng Zhang and Ning Gu

Displaying Multiple User Selections in Public Multi-user Wall-mounted Large-display Information Visualisation Environments 1227
Paul Craig and Yu Liu

A BERT based Sentiment Analysis and Key Entity Detection Approach for Online Financial Texts 1233
Lingyun Zhao, Lin Li, Xinhao Zheng and Jianwei Zhang

Analysis of students behavior characteristics based on K-mediods + Eclat 1239
Guangbin Bao, Yuli Mei, Gangle Li and Guoxiong Wang

An End-to-end Hierarchical Multi-task Learning Framework of Sentiment Analysis and Key Entity Identification for Online Financial Texts 1245
Xinhao Zheng, Lin Li and Weijian Zhang

Transfer Learning based Credit Scoring 1251
Qiancheng Wei, Ying Liu and Kaichao Wu

Analyzing and Predicting User Donations in Social Live Video Streaming 1256
Lu Jia, Yuanxing Rao and Siqi Shen

Research on the Impact of University Nodes Loss on the Robustness of Collaborative Innovation Network 1262
Doudou Wang, Xiaodong Zhang and Zehua Bi

An Embedding-based Deterministic Policy Gradient Model for Spatial Crowdsourcing Applications 1268
Yong Sun, Minshi Liu, Na Xie, Lu Zhao, Wenan Tan and Huang Li

Forest Fire Thermal Infrared Image Segmentation Based on K-V Model 1275
Bin Yang, Haiwei Pan, Shuning He, Kun Han and Xuecheng Zhao

"Digital-Ji-in": A framework for sustainable digital identification records based on a peer-to-peer network 1281
Shigeru Fujita, Yutaro Taki, Yotaro Miyanishi, Tokuyasu Kakuta, Masahiro Hiji, Kenji Sugawara, Norio Shiratori, Cloud Moulin and Thierry Digel

PAPR Reduction Scheme for OFDM Systems Based on Arnold Transform Without Side Information 1287
Chi Hu, Lingyin Wang and Zhuang Zhou

Constructing the Sequential Event Graph for Event Prediction towards Cyber-Physical Systems 1292
Zhiyuan Liu, Hongming Cai, Han Yu, Bingqing Shen and Lihong Jiang

A Multiple View Approach to Support Data Exploration in Co-located and Synchronous Collaboration 1298
Yu Liu and Paul Craig

Prediction of Typical Flue Gas Pollutants from Municipal Solid Waste Incineration Plants 1304

Shuya Li, Yifeng Zhang, Wenbin Song, Chunjiang Zhang, Chao Zhao, Weiming Shen, Jing Hai, Jiawei Lu and Yingshi Xie

Author Index 1310