2022 IEEE 8th International Conference on Cloud Computing and Intelligent Systems (CCIS 2022)

Chengdu, China 26-28 November 2022



IEEE Catalog Number: CFP2233N-POD ISBN: 978-1-6654-5657-9

Copyright © 2022 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:
 CFP2233N-POD

 ISBN (Print-On-Demand):
 978-1-6654-5657-9

 ISBN (Online):
 978-1-6654-7735-2

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

Invited Speakers

Invited Keynote-1	Trustworthy Federated Learning Qiang Yang	I
Invited Keynote-2	Theory and Algorithms for Open-World Continual Learning Bing Liu	I
Invited Keynote-3	Automatic and Semi-Automatic Translation for Cloud Programming Models Yi Pan	II
Invited Keynote-4	Urban Computing: Building Intelligent Cities Using AI and Big Data Yu Zheng	II
	Session I: Cloud Computing and Computational Intelligence	
01-011	Decoupling Observer for Contact Force Estimation of Robot Manipulators Based on Enhanced Gaussian Process Model Yanran Wei, Wenshuo Li, Yi Yang, Xiang Yu, Lei Guo	1
02-003	Diagonal Region Division-Based Fly Neural Network on Omnidrectional Collision Detection Lun Li, Zhuhong Zhang, Xiyin Wu	8
03-100	Minimizing the Average Job Completion Time for Acceleration Systems in Cloud Computing Ke Li, Qiang Yang, Shunrui Xiong, Pingzhi Fan	14
04-138	Incremental Updating Multigranulation Approximations with Matrix Representation Under Coarsening Decision Attribute Values Qiaowen Deng, Jin Qian, Ying Yu	20
05-112	GUARD: Multigranularity-based Unsupervised Anomaly Detection Algorithm for Multivariate Time Series Fan Meng, Qunli Yang, Zhengda He, Shangdong Yang, Weidong Tang	25
06-207	Dependency and Association Enhanced Finding Similar Exercises in Online Education System Zihang Tang, Hao Wang, Weibo Gao, Zhenya Huang, Qi Liu, Jun Yu	31
07-192	Dialogue-enriched Knowledge Point Recommendation for Consultation task Zheyong Xie, Shiwei Wu, Jia Su, Tong Xu, Enhong Chen	40

08-146	EfficientEsophagealLesionDetectionusingPolarizationRegularizedNetwork SlimmingYue Fu, Yao Zhou, Xianglei Yuan, Wei Liu, Bing Hu, Zhang Yi	46
	Session II: Computer Vision	53
09-128	Self-regulation and Supervision: A Study on Online Privacy Protection of Chinese and American Children in Mobile Apps Chen Yang, Huang Guiqiong	53
10-185	DynamicExtendDomainNameServerClientSubnetIPAddressAggregation Solution Based On Dynamic Network InformationJinxia Hai, Qi Chen, Yirong Zhuang, Peilin Xue, Zhifan Yin, Ge Chen	61
11-010	Pedestrian Multi-Objective Tracking Based on Work-Yolo Fanxin Yu, Qing Liu	66
12-063	An auxiliary assembly method of industrial structural parts based on virtual-real fusion Shengyong Li, Linqing Du, Shiyao Xu, Hongyu Wang	73
13-140	Pedestrian Attribute Recognition Based on Association Rules Diwei Xie, Heqian Qiu, Linfeng Xu	79
14-153	Automatic Container Recognition and Positioning Method Based on Hough Transform and Mask RCNN Jingxuan Shao, Yong Zhou, Wenfeng Li, Guodong Wang	84
15-157	Visual illusion cognition dataset construction and recognition performance by deep neural networks Tingting Li, Fanyu Wang, Ying Zhou, Zhenping Xie	90
16-156	Edge4FR: A Novel Device-Edge Collaborative Framework for Facial Recognition in Smart UAV Delivery Systems Yi Xu, Fengguang Luan, Xiao Liu, Xuejun Li	95
17-137	Interval-value replacement-based neighborhood rough set model in incomplete fuzzy information systems Xiong Meng, Jilin Yang, Tang Liu, Die Wu	102
	Session III: Machine Learning	109
18-077	Adversarial Guided Gradient Estimation Hashing For Cross-modal Retrieval Kangkang Lu, Meiyu Liang, Zhe Xue, Xiaowen Cao, Mengran Yin, Zehua Zhao	109
19-083	Graph Neural Networks with Multi-granularity Pooling Haichao sun, Guoyin Wang, Qun Liu	114

20-132	DADR: Deep adaptive dimensionality reduction architecture based on the coefficient of variation Xuemei Ding, Jielei Chu, Dao Xiang, Tianrui Li	119
21-141	Few-shot Learning with Attention Mechanism and Transfer Learning for Import and Export Commodities Classification Qing Zhao, Hua Yu, Jielei Chu, Tianrui Li	125
22-007	SDW-DPC: An Advanced Clustering Algorithm by Searching Density Peaks using Standard Deviation Weighted Distance Juanying Xie, Xinglin Liu, Mingzhao Wang, Wenjie Zhang	131
23-121	Supervised Multi-view Feature Selection Via Maximum Margin Criterion Joint Distributed Optimization Qiang Lin	138
24-190	PREVAIL: Pre-trained Variational Adversarial Active Learning for Molecular Property Prediction Linjie Li, Yi Xiao, Dewei Ma, Kai Zheng	143
25-199	Machine Learning based Movement Analysis and Correction for Table Tennis Xinzhu Qiu, Hao Zhang, Jiangning Wei, Jun Liu	150
26-095	Fractional Multiset Coherent Super-Resolution Representation for Low Resolution Face Recognition Yun-Hao Yuan, Jin Li, Yun Li, Jipeng Qiang, Yi Zhu, Yuequan Yang, Xiaobo Shen	155
	Session 1: Agents and Multi-Agent Systems	160
27-012	Path Planning Considering Time-Varying and Uncertain Movement Speed in Multi-Robot Automatic Warehouses: Problem Formulation and Algorithm Jingchuan Chen, Wei Chen, Jing Li, Xiguang Wei, Wenzhe Tan, Zuo-Jun Max, Hongbo Li	160
28-051	Multi-UAV Formation Control Based on Parameter Optimization ADRC Yuxin Hu, Changlin Liu, Ping Wang, Mengping Zhang, Han Mu, Quan Yuan	168
29-126	SNSE: State Novelty Sampling Exploration Shaojie Li, Xiangfeng Luo, Zhenyu Zhang, Hang Yu, Shaorong Xie	173
30-194	The Intersection of Companions: Differential Traffic Signal Control in Multi-Agent Systems Yilin Liu, Jinglin Li	181
31-052	Centralized Motion-Aware Enhancement for Single Object Tracking on Point Clouds Yue Wu, Jiaming Liu, Maoguo Gong, Wenping Ma, Qiguang Miao	186

32-088	Securing QR Codes Using a Hybrid Pseudo Baker's Mapped Cellular Automation Abdullah M. Iliyasu, Abubakar M. Iliyasu	193
33-159	A Virtual Restoration Experiment System for Porcelain Relics Cleaning Jen-Chen Ren, Hong Yan	200
	Session 2: Conputer Vision	204
34-004	Research on Denoising of Multiple Compressed Image Based on Structure-Texture Decomposition Faguo Zhou, Qiqi Liu, Xin Wang	204
35-016	Object Detection Algorithm Based on Channel-Spatial Fusion Cascade Attention Guojun Mao, Guanyi Liao, Hengliang Zhu	210
36-017	Remote Sensing Image River Segmentation Method Based on U-Net Qiang Cai, Ruyi Wan, Haisheng Li, Cheng Wang, Haodong Chang	215
37-018	A Fully Connected Network Based on Memory for Video Anomaly Detection Qian Liu, Xudong Zhou Ying Xiao, Yonghao Shi, Kunmei Liu	221
38-092	CNXA: A Novel Attention Mechanism Aided Convolution Network Zhijie Xiao, Donghong Cai, Zhicheng Dong, Ying Xiao, Yonghao Shi, Kunmei Liu	227
39-109	Remote Sensing Ship Detection Based on Three-way Decisions and Multi-granularity Feature Fusion Li Ying, Duoqian Miao, Zhifei Zhang, Qixian Zhang	234
40-183	Deep Hashing via Dynamic Similarity Learning for Image Retrieval Ziyu Meng, Letian Wang, Fei Dong, Xiushan Nie	239
	Session 3: Big data model and intelligent system	246
41-014	Metaverse for Learning Evaluation: Perspectives from Extended Reality and Blockchain Lingling Zi, Xin Cong	246
42-118	Research on the Application of Big Data in the Field of Aviation Safety Dawei Li, Bo Ren, Jianguo Gao, Jihui Xu	251
43-059	An Unmanned Aerial Vehicle-aided sparse data gathering in Wireless Sensor Networks Cuicui Lv, Peijin Wang, Peng Wang, Zhenbin Du, Xiangming Li	257
44-048	A BCI-Based Motion Control System for Heterogeneous Robot Swarm Zhen Huo, Tao Deng, Zhiyan Dong, Lihua Zhang, Lan Niu	261

45-019	Magnetic target localization method based on mobile platform Pengfei Jiang, Xueliang Pang, Hui Yang	267
46-136	Cloud Native Virtual Computing Cluster Jianlin Zhang, Min Han	273
	Session 4: Computer Vision	278
47-193	Focus On Objects: An Image Super-Resolution Model for Region of Interest Xiaolin Xing, Zhuoyuan Li	278
48-196	A Multimodal Fusion Scene Graph Generation Method Based on Semantic Description Liwen Ma, Weifeng Liu, Yaning Wang	282
49-200	Multimodal Co-Attention Mechanism for One-stage Visual Grounding Zhihan Yu, Mingcong Lu, Ruifan Li	288
50-209	High-Precision Visual Navigation And Localization Method Zhiyong Peng, Dongsheng Li, Longtao Cai	293
51-152	Automated Plagiarism Detection Model Based On Deep Siamese Network Jing Zhang, Siyuan Xue, Jle Liu, Jlanshe Zhou	298
52-079	New Fire Disaster Detection Algorithms Based on Yolov4 HuiJun Su, ZhiHong Chen, HaiWei Zhang, ShuangLong Xu	303
53-206	An Attention-Lightweight YOLOv5 Aerial Dense Object Detection Method Xia Xingyu, Liu Weifeng, Peng Zhangming	308
	Session 5: Deep learning	315
54-031	Cascaded ASPP and Attention Mechanism-based Deeplabv3+ Semantic Segmentation Model Shuaiping Guo, Changming Zhu	315
55-053	Remolding Semantic Focus with Dual Attention Mechanism for Aspect-based Sentiment Analysis Xingda Li, Yanwei Bao, Min Hu, Fuji Ren	319
56-074	Exploring Learning with Deep Heterogeneous Descriptor-based Sampling Cui Wang, Wei Ke, Zewei Wu, Zhang Xiong	325
57-080	A Survey of Deep Learning-based Hand Pose Estimation Shuaibing Wang, Shunli Wang, Haopeng Kuang, Fang Li, Ziyun Qian, Mingcheng Li, Lihua Zhang	331
58-108	An optimization r-cnn method for Ovarian cyst detection Jiade Li, Qili Chen	341

	348
iting	348
1 1eina	355
stion	
acter	36:
nent	371
ernal	378
iplet	38.
er: A	39
	40

	Session 6: Informationg Retrieval and Recommendation	
59-123	A Joint Learning Sentiment Analysis Method Incorporating Emoji-Augmentation Jie Chen, Luping Luo, Bojing Ji, Shi Zhao, Yanping Zhang	34
60-097	EI-Rec: Enhanced User and News Interaction for News Recommendation Rui Xin, Xi Chen, Dan Jiang, Yue He, Zhonghong Ou, Peihang Liu, Zongzhi Han, Meina Song, Meina Song	35
61-160	Contrastive Semantic Similarity Learning for Multi-Hop Question Answering over Event-Centric Knowledge Graphs Wei Tang, Qingchao Kong, Wenji Mao, Xiaofei Wu	36
62-046	A Chinese Text Classification Model Based On Radicals And Character Distinctions Yanxin Huang, Bo Li	36
63-047	Social Recommendation System Based on Multi-agent Deep Reinforcement Learning Ying-Gang Li, Xiang-Rong Tong	37
64-069	IMQA: A Knowledge Graph Driven Question Answering System for Internal Medicine Mengzhan Li, Haisheng Li, Wei Wang, Di Wang	37
65-096	InterCLIP: Adapting CLIP To Interactive Image Retrieval with Triplet Similarity Zhonghong Ou, Shi Li, Zijing Tian, Minghao Shi, Shihui Liu, Meina Song	38
66-119	Deep Text Retrieval Models based on DNN, CNN, RNN and Transformer: A review Jianping Liu, Xintao Chu, Yingfei Wang, Meng Wang	39
67-135	Global Interest Transfer Guided Session-based Recommendation Shukang Si, Shengming Guo, Xiao Xu, Hang Yu, Xiangfeng Luo	40
	Session 7: Machine Learning	40
68-120	Set-valued Preference Relation and its Properties Biao Huang, Banghe Han, Junqi Tian	40
69-154	Learnable Gated Graph Convolutional Residual Network for Traffic Prediction Yong Zhang, Xiulan Wei, Xinyu Zhang, Feng Lin, Yongli Hu, Baocai Yin	41

70-201	Attention based Long Short-Term Memory Network for Coastal Visibility Forecast Rui Min, Ming Wu, Mengqiu Xu, Xun Zhu	420
71-37	Research on scheduling path planning of multi-objective unmanned tractor based on reinforcement learning method Haichen Wang, Huarui Wu,Ning Zhang	426
72-066	An Enhanced Anomalies Detection Method Based On Isolation Forest And Fuzzy Set Xiaoxia Zhang, Hao Gan	432
73-078	Mitigating Both Covariate and Conditional Shift for Domain Generalization Jianxin Lin, Yongqiang Tang, Junping Wang, Wensheng Zhang	437
	Session 8: Deep Learning	444
74-124	Short-Term Power Load Forecasting Based on IWOA-Attention-BiLSTM Zhanpeng Liu, Xiuquan Wang, Jiwei Xing, Mifeng Ren, Xinying Xu	444
75-127	A Survey of Research Progress and Theory Foundation in Large Model Dong Xiaofei, Zhang Xueqiang,?Zhang Dan, Cao Feng?,?Bai Bingfeng	451
76-142	Survey of images semantic segmentation based on deep learning Jinliang Ou, Hong Lin, Zhenping Qiang, Zhuqun Chen	456
77-144	VQ-ViCNet: Strengthen Unique Features Comparison Autoencoder with Embedding Space for Covid-19 Image Classification Qide Liu, Jielei Chu, Hua Yu, XinLei Wang, Tianrui Li	464
78-155	TempCast: A Multi-modal Transformer for Short-Term Temperature Forecasting Wei Zhang, Yang Cao, Jun-hai Zhai, Ziyao Mu, Shuai Zhang	469
79-166	AM-DenseNet: A Novel DenseNet Framework using Attention Mechanisms for COVID-19 CT Image Classification Yujiao Shi, Tunan Zhou, Zeqing You, Jielei Chu, Tianrui Li	474
80-188	Modeling Dynamic Entities in Temporal Knowledge Graphs Chen Guo, Yang Lin, Hao Chen, Haiyang Yu, Chengwei Zhu, Lejun Zhang, Jing Qiu	480
81-139	A deep learning algorithm for stock selection based on multi-factor anomaly detection Jun-cheng Chen, Zhen Li, Xiaoyun Cai, Zhi Cai, Wei-wei Wang	485
	Session 9: Information Retrieval and Recommendation	491

82-173	Scientific and Technological News Recommendation Based on Knowledge Graph with User Perception Yuyao Zeng, Junping Du, Zhe Xue?, Ang Li	491
83-174	Unsupervised Semantic Representation Learning of Scientific Literature Based on Graph Attention Mechanism and Maximum Mutual Information Hongrui Gao, Yawen Li, Meiyu Liang, Zeli Guan	496
84-175	A Relational Triple Extraction Method Based on Feature Reasoning for Technological Patents Runze Fang, Junping Du, Yingxia Shao, Zeli Guan	501
85-176	Adaptive Dual Channel Convolution Hypergraph Representation Learning for Technological Intellectual Property Yuxin Liu, Yawen Li, Yingxia Shao, Zeli Guan	506
86-177	Scientific Paper Classification Based on Graph Neural Network with Hypergraph Self-attention Mechanism Jiashun Liu, Zhe Xue, Ang Li	511
87-178	Embedding Representation of Academic Heterogeneous Information Networks Based on Federated Learning Junfu Wang, Yawen Li, Meiyu Liang, Ang Li	516
88-179	Cross-modal Search Method of Technology Video based on Adversarial Learning and Feature Fusion Xiangbin Liu, Junping Du, Meiyu Liang, Ang Li	521
89-191	Point-of-InterestsRecommendationbasedonUser-POICouplingRelationshipsXiangfu Meng, Mingyang Zhang, Xiaoyan Zhang, Jinfeng Fang	526
	Session 10: Machine Learning	531
90-084	FRETA-D: A Toolkit of Automatic Annotation of Grammatical and Phonetic Error Types in French Dictations Yumeng Luo, Yuming Zhai, Ying Qin	531
91-086	Stacked Ensemble of Metamodels for Expensive Global Optimization Ziliang Miao, Buwei He, Hubocheng Tang, Jixiang Chen, Zhenkun Wang	538
92-090	Physics-guided Data Augmentation for Learning the Solution Operator of Linear Differential Equations Ye Li, Yiwen Pang, and Bin Shan	543
93-168	Allocation and sharing of spectrum resources based on cognitive mechanisms Yue Gao, Chao Li and Xiangjian Chen	548

94-189	Kernel Least Mean Square With Maximum Correntropy Criterion Yawen Li, Wenling Li, Zhe Xue, Ang Li	554
95-009	QoE-Guaranteed Heterogeneous Task Offloading with Deep Reinforcement Learning in Edge Computing Zhiwen Zhou, Yingbo Wu, Jiaxin Hou	558
	Session 11: Neural Network Applications	565
96-211	An Efficient End-to-End CNN Network for High-voltage Transmission Line Segmentation Lei Yang, Shuyi Kong, Shilong Cui, Hanyun Huang, Yanhong Liu	565
97-005	Design of Variance-Constrained H ∞ State Estimation Algorithm for Delayed Memristive Neural Networks with Attacks: An Adaptive Event-Triggered Approach Yan Gao, Jun Hu, Hui Yu, Chaoqing Jia	571
98-043	Graph-Augmented Multi-Level Representation Learning for Session-based Recommendation Chengxin Ding, Jianhui Li, Tianhang Liu, Zhongying Zhao	576
99-064	The Mudstone Weathering Detection Algorithm Based on Multi-branch Network Huang Hui Hong	581
100-122	U3E: Unsupervised and Erasure-based Evidence Extraction for Machine Reading Comprehension Suzhe He, Shumin Shi, Chenghao Wu, Heyan Huang	585
101-129	Re-weighting and Hierarchical Pre-training Boost 3D Medical Self-Supervised Representation Shouyu Chen, Yin Wang, Ke Sun, Xiwen Sun	590
102-164	Robust Automated Essay Scoring by Using Attentive Capsule Siyuan Xue, Jing Zhang, Jianshe Zhou, Fuji Ren	595
103-187	Adaptive Threshold for Unknown Traffic Identification Pengcheng Wang, Jianfeng Guan, Zhuang Han	600
	Session 12: Pattern Recognition and Image Processing	606
104-013	Hierarchical Strategy for Sequence-based Visual Place Recognition Baifan Chen, Xiaoting Song, Ruyi Zhu	606
105-212	Adaptive Weight of Unreliable Relation Module for Semi-supervised Multi-label Image Recognition Ziyuan Wang, Zhenzhao, Lei Qi, Yinghuan Shi, Yang Gao	612

106-208	Realization of tree and grass recognition based on AlexNet Wang Yun-zhou, Zhu Min-ling, Chen Lei, Zhao Peng, Liu Hao-Nan, Xu Bo-lang	617
107-050	Tree species identification method based on improved YOLOv7 Boyu Hu, Minling Zhu, Lei Chen, Lei Huang, Ping Chen, Mingdong He	622
108-114	Emotion Recognition Method based on Guided Fusion of Facial Expression and Bodily Posture Huang Zhong, Zhang Danni, Ren Fuji, Hu Min, Liu Juan	628
109-015	Face Image Smart Capture System Using Embedded Device Zhaoxia Wang, Yongxin Liu	633
	Session 13: Smart City & IoT	638
110-202	Design of Simultaneous State and Unknown Input Filtering Algorithm for a Class of Nonlinear Stochastic Systems with Multiple Sensors Zhibin Hu, Jun Hu, Cai Chen, Junhua Du	638
111-205	Design of Event-Based Resilient Distributed Filtering Algorithm for Time-Varying Stochastic Systems with Correlated Noises over Sensor Networks Zehao Li, Jun Hu, Jiaxing Li, Peixia Gao, Ruijie Dong	643
112-210	Design and Implementation of Standardized Universal P2P Protocol Framework Based on Central Server Shuo Han, Yuan Wen, Tao Sun, Haoyuan Wang, Wenliang Wu	648
113-032	Multi-Task Multi-Attention Graph Neural Network for Mobile Crowd Sensing Data Reconstruction and Prediction Jianjun Tong , Yunhao Xing, Zijian Cao?, Dong Zhao	654
114-054	A method of vehicle trajectory restoration based on Kalman Filter Jiaming Sun, Xu Sun, Zhonghan Zhan, Jiaxu Zhou	662
115-197	Online Global Query Planning for Dynamic Road Networks Siyi Zhang, Xiaoxi Cui, Yurong Cheng?, Ye Yuan, Guoren Wang	666
116-116	A Two-Sided Stable Matching Method in Ridesharing Jingwei Lv, Jiannan Hao , Shuzhen Yao,? Huobin Tan	671
	Session 14: Data Mining	676
117-020	Concentration distribution and cluster analysis of PM2.5 based on lognormal cloud model Xiaoxia Zhang, Hao Liang, Fujin Zhong, Yanjun Liu, Guoyin Wang	676

118-030	A feature selection method combining neighborhood rough set and butterfly optimization algorithm Shumao Pan, JingJing Hu, Gangqiang Zhang	684
119-033	Robust-STP: A Robust Seasonal-trend Decomposition Method for Partial Periodic Time Series Haidong Xu, Xiaoxia Zhang, Dong Liang, Guoyin Wang	691
120-071	Uncertainty Estimation Based Doubly Robust Learning for Debiasing Recommendation Chenyang Su, Qiang Liu, Liang Wang	696
121-072	Attribute Reduction Based on the Neighborhood Distinguishing Ability Coefficient Linxia Zheng, Jun Hu	702
122-076	A microservice fault identification method based on LightGBM Ning Jing, Han Li, Zhuofeng Zhao	709
123-098	SPNet: Utilizing Subspace Projection to Achieve Feature Interaction for Click-Through Rate Xu Zhang, Zhonghong Ou, Meina Song	714
124-184	Citywide Traffic Volume Inference using Traffic Sensing Data with Missing Values Jinshuai Wang, Bingqi Yan, Yanwei Yu	720