2026 7th International Conference on Big Data & Artificial Intelligence & Software Engineering (ICBASE 2026)

Shenyang, China
12-14 June 2026

Pages 1–457

IEEE Catalog Number: CFP26Y95-POD
ISBN: 979-8-3195-4191-8

Copyright © 2026, IEEE

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:	CFP26Y95-POD
ISBN (Print-On-Demand):	979-8-3195-4191-8
ISBN (Online):	979-8-3195-4190-1

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

CURRAN ASSOCIATES INC. proceedings .com

TABLE OF CONTENTS

Research on Multi-Modal Feature Fusion Strategies for 3D Medical Image Segmentation 1
Jiachen Yan, Yuansong Li

Ptery-MSGNet: A Lightweight Dual-Branch Network with Multi-Scale Fusion for Pterygium Classification 5
Xiaoqian Deng, Zihan Liu, Hongjia Zhang, Siyu Chen, Yankun Wang

FCENet: Frequency-selective and Cross-view Enhancement Network for Stereo Matching 10
Dong Wang, Guangfen Wei, Jie Zhao, Yongwen Zhang

Dual-Branch Spatio-Temporal Feature Modeling for Illumination-Robust Driver Fatigue Detection 15
Taotao Sun, Nor Anis Asma Sulaiman, Thian Seng Lee

Research on SSVEP Signal Classification Based on CNN-Mamba 19
Ruizhen Xie, Chengzhi Xu, Liuyuan Dong, Xuyang Wang

Semantic Matching Simulation of CAD-BIM heterogeneous graphic elements Based on Multi-layer perceptron-attention model 23
Hui Chen, Long Lv, Xiaohua Ye, Wenliang Li, Ming Ma, Zhonghe Fan

Research on Few-Shot Image Classification Method Based on Adaptive Attention Mechanism 27
Yucong Wan

Textile Defect Detection via Multi-Model Fusion and Imbalance Optimization 31
Yibo Wang

An Uncertainty-Aware Relational Distillation for Real-world Super-resolution in Real-ESRGAN 36
Anran Guo, Haiyang Zhang, Junyue Sun

Dual-Branch Gated Fusion with Weighted Cross-Entropy for Robust Environmental Sound Classification 42
Ran Li

Diffusion-Guided Structural Re-Parameterization for Lightweight Infrared and Visible Image Fusion 47
Chenyu Zhang, Junyue Sun

Exam-based Image-Text Logic Consistency Verification via Feature-wise Modulation and Residual Fusion 56
Zhong Shao, Hongpeng Qin

Loop2Net: Data-Driven Generation and Optimization of Airfoil CFD Meshes from Sparse Boundary Coordinates 62
Lushun Fan, Shuai Yu, Simin Wang, Yaolan Jin, Yuqin Xia, Xin Qiu, Miao Xu, Hengyu Ji, Jun Li Karl Jenkins

From Model Comparison to Heterogeneous Fusion: A Gated Residual Framework for Brain Tumor MRI Segmentation 72
Yanzu Zhang

DFA-YOLO: Multi-Scale Dilated Fusion Attention for Improved Document Layout Analysis Based on Improved YOLO11 78
Lei Yan, Abdusalam Dawut, Hoxur Islam, Askar Hamdulla

Design and research on lightweighting Strategies for CLIP-Based Cross-Modal Model 83
Tingting Wu, Qinghua Wu, Jinxin Ruan, Shuang Qiu

A Tomato Leaf Disease Recognition Method Based on Parameterized Wavelet-Enhanced MobileNetV3-Small 89
Zhihao Yang, Xu E, Jiayin Li, Lei Song

Research on Greenhouse Bell Pepper Disease Detection System Based on Edge Computing and Dual-Engine Dynamic Inference 93
Juan Zhang, Kim Young Chul

PCPEVT: A Dual-Branch Network Employing Partial Channel Convolution and Positional Encoding Attention for Cervical Histopathological Image Classification 97
Liping Peng

Precision Detection of Gastric Cancer Using MCSCN 103
Siqi Chen, Qingshan Liu, Ruishi Lin, Liyong Ma

The Pitfall of Pixel-Level Domain Adaptation for Cross-Device Polyp Segmentation 108
Zihan Yao, Ruishi Lin, Siqi Chen, Liyong Ma

GAN-Based Radar Phase-Coded Waveform Design 114
Yuze Wang, Yuhan Xia, Haiyan Zhang, Kui Ma

Panoramic Image Generation of Corneal Subbasal Nerve Plexus Based on UniStitch 119
Chunzhuang Yang, Fang Wang, Hua Yu, Jiaxing Tian

Object Detection Algorithm for UAV Aerial Images Based on Cross-Scale Feature Fusion 124
Zhaokai Wei, Hongshe Dang

A Speaker Embedding-Based Target Speech Extraction Method 128
Jiahui Chen, Xiaoxin Zhang

MBD-YOLO A Lightweight Feature-Enhanced Network for Robust Marine Beach Debris Detection 132
Qiuni Wu, Cheng Chen, Junhao Chen, Shenming Gu

Lightweight Audio–Visual Emotion Recognition with Cross-Modal Gated Attention 137
Jiaqi Xu, Hailong Chen, Fuda Xue

Mechanism-Embedded Deep Learning-Based Steel Plate Surface Defect Detection 141
Xinkai Xu, Tongwei Zhang, Ruyu Sun, Haotian Xu, Yungui Zhang, Xiansong Bai

Transmission Line Anti-External Damage Detection for Ultra-Low Power MCUs Based on TinyML 146
Jiahui Yang, Wei Cao

Generating LiDAR-Quality Point Clouds from Cascaded mmWave Radar via Fast Diffusion Models 152
Tao Xu, Haoyu Zhang

A Lightweight Remote Sensing Small Object Detection Algorithm Based on Frequency-Guided Edge Enhancement and Multi-Dimensional Attention 156
Yiming Liu, Deguo Yang

Enhanced VM-UNet for Skin Lesion Segmentation: A Reproducible Study with CBAM and ASPP 160
Yuan Liang, Yuansong Li

Wavelet High-Frequency Enhanced Diffusion Neural Operator 164
Yating Fan, Ying Li

SpecPrune: Accelerating Video LLMs via Diversity-Aware Vision Token Pruning 169
Yan Feng, Jing Li

A Lightweight End-to-End Pipeline for Industrial Nameplate Recognition Under Adverse Conditions: From Image Enhancement to Structured Information Extraction 175
Jiahao Han, Longrun Zhi, Zhitao Li, Lihao Wu, Zeyu Li, Shengyong Guo

Alternative Optimization Pathways for YOLOv11n in Blood Cell Detection: Swin-Transformer versus Channel-Wise Knowledge Distillation 180
Zhenyang Hai, Lei Zhang, Wenjian Liu

MS-CLIP-AD: Multi-Scale CLIP-Guided Anomaly Detection with Chain-of-Thought LLM Reasoning for Interpretable Industrial Inspection 186
Bing Liu

A Multi-Scale Enhanced YOLOv8 Framework for Fine-Grained Agricultural Pest Detection 194
Fengxi Zhang, Linyan Hou, Tianjiao Li, Kai Wang

Defect-Aware Data Augmentation for Small Pipeline Weld Defect Detection Based on YOLOv13 198
Jiamu Di, Tingting Sui

DEF-YOLO for Dual-Enhancement Fusion in Road Crack Detection 203
Jinghuang Wu, Zou Zhou

Multimodal 3D Scene Semantic Compression and Generative Reconstruction Framework for Low-Bandwidth Environments 210
Meixia Dong, Jinhua Chen

A Lightweight Detection Model of Defect Detection of Wind turbine blades 217
Manze Wang, Bo Zhao, Xingyu Li, Yuhang Dai

BMRF-Net: A Boundary-Guided Multi-Scale Residual Fusion Network for Brain Tumor Segmentation 224
Ziyi Wang

SCH-Net: Sparse Cross-modality Hierarchical Aggregation Network for Ovarian Tumor Classification from Multi-modal MRI 230
Jie Jiang, Haoyue Li, Yongai Li, Xin Gao, Chenyu Jiang

Semantic-Guided Mamba with Multi-Scale Attention Decoupling for Image Segmentation 236
Yutian Wang, Yuqing Shi, Liang Zhang, Wenxu Zhang, Kaiwu Zhang, Shiqiang Du

QG-Former: Controlled Quality and Geometry Fusion for Open Vocabulary 3D Segmentation 241
Zilei Zhou

DeltaMamba: Pretrained Differential Mamba for Cuffless Blood Pressure Estimation From Photoplethysmography (PPG) 246
Zijing Zhang, Xiaotong Wu, Haonan Zhang

A High-Resolution Lightweight YOLO Network for Object Detection in Very-High-Resolution Remote Sensing Images 250
Xiaofei Shi, Jiaming Zhu

PVM-UNet3+: Full-Scale Skip Connections Enhanced by Parallel Vision Mamba for Stroke Lesion Segmentation 254
Xiaoyu Huang, Yang Li

Rethinking Data Composition for Generalizable Deepfake Detection 259
Yiwen Liu, Jiang Uo Jiang

LF-EHNet: A Spatial-Angular Joint Attention Driven Network for Light Field Super-Resolution 267
Wenfei Gao, Xiaoling Zhang, Yubo Shu

Functional-Emotional Explainability Framework for Warehouse Human–Robot Collaboration and Its Impact on Long-Term Trust Dynamics 271
Zhimeng Zhang, Xiao Ma, Shuai Wang, Yunhua Wang, Qin Zhang, Daofang Chang

Research on Performance Evaluation Methods for Communication Systems Based on Digital Twin 279
Xiang Zhang, Yujing Zhang, Yang Yu, Mingshu Wang, Jiaxin Zhang, Yu Zhang

Intelligent Obesity Risk Mining and Privacy Protection in Cloud-Edge Collaboration 285
Hengfang Yu, Li Yu

Software Defect Prediction and Test Optimization Based on an Improved BiLSTM Network 291
Ning Wu, Miao Cheng

Learning Augmented Cold Start Mitigation for Serverless Machine Learning Inference 295
Jiejun Jiang, Jiahui Hu, Yiyun Lyu

Local-Support Guided Latent Generation for Reliable Minority-Class Augmentation in Network Intrusion Detection 301
Xinxin Chang, Shibao Sun

Detecting XSS attacks via semantic reconstruction and adversarial enhancement 306
Yan Zhao, Gaofei Zhang, Yuan Yao

Research on Cross-Domain Integrated Verification and Validation Technologies for Nuclear Safety-Level Data Processing Software 313
Bo Hu, Chunxia Li, Bingjun Yan, Mingxu Gang

Application and Research of Gated Loop Unit Based on Arduino Sensors in Plant Prediction 320
Guorui Li, Kim Young Chul

Advancing Cryptographic Implementation Security through Expert-Driven CoT-RAG Architecture 324
Xuanrui Zhang, Yu Sun

Design of an Intelligent Inspection and Control Platform Based on DCS Integration and Multimodal Data Fusion 329
Wenxuan Zhang, Lei Jiang, Leilei Fan, Wei Peng

Research on Optimization and Performance Testing of Key Technologies in Distributed Computing 335
Baoxin Tai, Bo Hu

Research on Automotive Software License Compliance Based on MCP 341
Tianling Liu, Qingyang Wu, Zhen Guo, Yuqiao Ning, Longhai Yu, Yang Wang

FuelAgent: A Multi-Agent LLM Framework for Automated Decision Making in the Refined Oil Market 349
Jianwei Zhang, Chuanji Gao, Lele Zheng, De Xuan, Ruibin Sun, Guilong Yang, Guangchao Deng

Technical Implementation of Generative AI-Assisted Programming Course 364
Xiang Nan, Fengping Xu

Evaluating Fine-tuned Code Language Models for SSTI Payload Candidate Generation 369
Ke Li, Chaobin Huo, Qiang Ruan, Ye Wang, Lei Zhang, Lizhou Cui

A Continuous-Time Computational Modeling Framework for Smartphone Battery Management: High-Precision SOC Prediction, Global Sensitivity Analysis, and Software-Level Optimization Algorithms 378
Zhuoqiang Chen, Tianning Zhao, Qiuhan Zhang, Yue Liu

Joint Semi-Quantum Authentication Protocol for Bell State and W State in Heterogeneous Communication Scenarios 386
Jinxi Wu, Jinliang Cao

Web Log Anomaly Detection via Multi-Agent RAG 393
Qize Hao, Xuelong Wang

Gain-Consistency-Constrained Latency-Adaptive ADC Sampling Compensation for Thermocouple Weak Signals 397
Yupeng Li, Junqian Zhang, Yibin Gong, Xiaowei Chen, Heng Zhang, Hua Zhang, Yunbo Wang, Tianyu Yuan

Spectral GNE for Robust Configuration Optimization in Adversarial Risk Detection 406
Tim Huhle, Olivier Torun, Wanglin Song, Claudia Breuil

Analysis of MySQL Index Failure and Performance Optimization Strategies in High-Concurrency Scenarios 411
Yanjie Li

Design and Implementation of a Health Management System Based on the Fine-Tuned BlueHeart Large Model 415
Jia Tian, Junhuai Zeng, Yinglu Chen, Yongjie Peng, Zhijian Luo, Xujing Lin, Bin Yin

Research on the construction method of algorithmic resource ecological system based on niche theory 420
Weijun Hu, Yanchao Yin, Yongchang Liu, Wanda Zhang

A Survey of Feature Metric Methods for Software Defect Prediction 428
Jinpeng Xu, Chunjiang Li, Yijun Miao, Maomao Wang, Zhiwei Tang

TSSC-UML: Unsupervised Few-Shot Fault Diagnosis for AUVs via Multivariate Time-series Soft Clustering Meta-Learning 433
Chao Sun, Haibo Shi, Shuai Li, Daquan Guo, Chunhui Xu, Xiaofeng Zhou

Optimization of Visible Light Communication Light Source Layout Based on Improved LILO Algorithm 443
Tianyi Wang, Chiawei Chu

Class-Level Test Code Generation and Evaluation Approach Based on Large Language Models 447
Mingzhe Zhao, Dongmei Liu, Longyang Mi, Fuze Kuang

Decentralized Biometric Authentication with Privacy-Preserving LWE Encryption 453
Jun Cai, Wentao Zhu, Qiang Wang, Heqing Yuan

On the Limited Effect of Role Prompting in LLM-based Code Vulnerability Detection 458
Jinyang Guan, Haoyu Wang, Ying Yin, Yuhai Zhao

Semantic Code Search with Fusion Graph Representation 464
Haoming Yang, Yangfan Zheng, Hongyu Li, Yuhai Zhao

An LLM-Augmented Predictive Auto-Scaling Framework for Latency-Sensitive Microservice Backends 468
Chun-Yao Hsieh, Zijian Xiao, Xiayuan Liu, Zilong Wang, Yixue Liu, Xuexian Li

Research on Industrial Equipment Multimodal Health Management Method Based on Adaptive Collaborative Evaluation-Optimization Network 474
Yunyu Cui, Weijie Kang, Bing He, Guodong Duan

A Hardware Trojan Detection Method for Post-Quantum Cryptography Based on Graph Convolutional Feature Fusion 480
Haojie Jia, Bin Li, Linying Liu, Bing'Ao Chen

Using AI to Monitor AI: Automated Operations Through Log-Driven Intelligence 488
Chen Qi, Xiaoying Qiao

Task-Aware Symbolic Reasoning for Automated Repository Reconstruction: A Prolog and Database Study in ACCRa 493
Davide Evangelista, Mathieu Linty, Andrei Mikriukov, Alessandro Ravveduto, Mariia Snigireva Giancarlo Succi, Alexander Tormasov

Budget-aware Test-Sufficient Context Selection for Java Unit Test Generation 506
Yifu Wang, Dong Guo, Lu Lu

TaintCoBERT-E: Taint-Enhanced Web Vulnerability Detection via Enriched Feature Engineering 514
Hao Yuan, Wanli Wu, Kailong Zhu

Neural Network Channel Modeling Based on Self-Attention Mechanism 518
Qiyao Zhang

Automated AFSIM Script Generation via Retrieval-Augmented Reasoning and Constrained Decoding 525
Rui Gao, Tinghua Zhang, Zhixiu Huang, Yang Yang, Yang Bai, Jinyin Chen

Urban Mobile Charging Vehicle Scheduling via Bi- Level Coupled Optimization: Spatio-Temporal Demand Prediction, MCLP Pre-Deployment, and VRPTW-Based Dynamic Dispatch 531
Siwei An

Context-Aware Document Slicing and Vectorized Retrieval Optimization for Programming in Power Grid Scenarios 541
Wentao Feng, Bingyan Deng, Ziwen Zhang, Xinran Peng, Sirui Huang

Prompt Engineering Strategies for Automated Software Requirements Classification 546
Liangliang Zhu

Kernel Observability Budget Meets Model Capacity: A Cost-Aware Study of Lightweight Syscall-Sequence Detectors 553
Zhenhao Kao

Design and Development of an AI-Driven Safety Production Automation Early Warning System for Chemical Enterprises Based on Multimodal Data Fusion and Digital Twins 558
Yi Liu

Design and Implementation of an Intelligent Business Intelligence Question-Answering System Based on Large Language Models 562
Yao Xiao

Low-Latency Hybrid Post-Quantum Secure Access Protocol for Resource-Constrained Terminals 568
Yuan Zhong, Yiqun Zhu

AI-Augmented Automated Triage for System Error Reporting Using Log and Memory Dump Analysis 572
Yuxuan Li

CPTF-DAN: A Class-Balanced Prototype-Guided Time–Frequency Domain Adaptation Network for Bearing Fault Diagnosis 578
Ding Luo, Guodong Zhao

Cost-Efficient Computation Offloading in Multi-Layer Heterogeneous Satellite Networks 583
Qingxiao Xiu, Jun Liu, Meihui Chen, Jiayi Qu

Automated Generation Method for Airworthiness SysML Use Case Models Based on Deep Semantic Parsing 588
Xinlong Zhang, Chunlong Fan, Li Xu

MERIT: A Multi-Signal Repair Framework for Code Translation with Large Language Models 597
Jiachang Guo

Electromagnetic Sensing and Data-Driven Health Assessment of Composite Traction Belts for Smart Elevator Systems 606
Xiaoling Liao, Huicheng Fu, Yanlei Liu, Hong Wang, Linan Liu, Hongtao Tong

Research on Multi-Agent Collaborative Task Allocation System in Cross-Border E-Commerce Scenarios 613
Wen Wang, Wulin Yin, Siying Li, Bo Yuan

Environment Interaction Modeling for Bounded Model Checking of Embedded HAL Programs 619
Yinan You, Liangze Yin, Kun Chen

Not All Prompts Are Equal: Model-Specific Strategy Selection for Automated NESMA Function Point Recognition with Large Language Models 623
Guojun Yan, Boyuan Hou, Yutian Lei, Liguo Li, Xin Xie, Meixuan Qiao

Research on Optimization of Navigation Cockpit Layout by Integrating Entropy Theory and NSGA-III 628
Lei Sun, Kun Li

SAPA: Structure-Adaptive Pattern-Guided Resource Allocation for Latent-Regime Edge-Intelligent Sensor Networks 633
Jingxiang Ma, Ping Liu, Hongbin Ma, Ying Jin

A Physical Feature-Enhanced Graph Neural Network for Target-Impedance Classification of PCB Decoupling-Capacitor Layouts 638
Yu Zhang, Xiaoling Zhang, Xiao Xie

Risk-Aware Sensing-Assisted Scheduling for UGV-Aided Multi-UAV Inspection Under Strict TDMA 642
Shuhao Qiang, Xiaoling Zhang, Xiaoyu Zhang

Range-Profile-Aware and Null-Protected Hybrid Precoding for Finite-Bit Near-Field Wideband OFDM-ISAC 646
Yilin Bao, Xiaoling Zhang, Xiao Xie, Xinpeng Yang, Xiaoyu Zhang

APS System and Scheduling Algorithm for Steel Order Production and Manufacturing 650
Aofei Zhao, Xiaoling Zhang, Wenchu Sun, Xiaoyu Zhang

Research on a Graph Neural Network and Transformer Fusion Model for Network Intrusion Detection 654
Jiangmin Tang

Fruit Price Prediction Method Integrating Temporal Convolutional Network and Transformer 659
Jianying Feng, Siwen Wang, Le Zhang, Weisong Mu

AdaKG-CoT: Adaptive Reasoning Depth for Knowledge Graph-Enhanced Chain-of-Thought Prompting 669
Xiaoyu Li, Hong Xu

Label Credibility-Aware Self-Correction for Robust Text Classification in Large Language Models 674
Hejun Huang, Lanming Ma, Runkun Long, Lei Mao

Protein Secondary Structure Prediction Based on Ensemble Learning and Bayesian Optimization 681
Xinwei Chen, Jun Liang, Jing Liu

A Study on a Collaborative Mechanism for the Targeted Promotion of National Languages and Scripts Through Digital Technology: Based on Multimodal BERT Feature Fusion and Collaborative Filtering 685
Zhao Ke, Zexi Zhou, Juan Hong

A Machine Learning-Based Method for Retrieving Atmospheric Temperature and Humidity Profiles from FY4B-GIIRS Data 689
Huikun Huang, Xiaodan Zhang, Chen Quan, Minghui Li, Yongchun Chen, Yuanchen Huang

Large Language Model-driven Multi-perspective Narrative Generation for Greater Bay Area Cultural Heritage 697
Lei Wang

SK-DDI: Structure-Knowledge Dual-Perspective Approach for Drug-Drug Interaction Prediction 705
Yumeng Guo, Xiaoying Yan

Machine Learning Prediction of Marine Fishery Carbon Sinks in China 710
Bingjie Xie, Bohong Wang, Hengcong Tao, Zhisong Liu

Span-Based Gazetteer Integration for Robust Named Entity Recognition in Code-Mixed Text 714
Tianai Tang, Kwankamol Nongpong

A Dense-Sparse Hybrid Retrieval Framework with Context-Aware Rule Denoising for Multi-Granularity Consistency Evaluation of Power Standards 720
Zhifeng Wei, Feng Wang, Haiyang Liu, Bingqiang Gao, Yuxin Han, Jie Zhang

Transformer-KAM Pump Head Prediction Based on Segmented Reversible Instance Normalization 725
Runli Qu, Fang Wang, Siyuan Ma, Deyin Kong, Xingchun Li, Jianbo Han

Rethinking Reward Sparsity in Generative Recommendation: A Mixed Hierarchical Soft Reward Approach 731
Zhuorui Liu, Fan Feng, Jinyi Wei

Graph-Enhanced Mamba for Multivariate Time Series Anomaly Detection 737
Ruijie Li, Zhengxing Huang, Guangyu Xu

Classification Study of Aviation Engine Accident Narrative Texts Based on Deep Learning 742
Fen Lai, Changshun Yan

Server Cluster Health Quantification and Anomaly Detection via Historical Operation Data and Graph Attention Network 746
Rui Zeng, Huoqing Lin, Fan Pan, Xiaofeng Tan, Jie Li

Multi-Task Prediction of Student Performance and Learning Behaviors via Residual AKT-MMoE 752
Dazhi Zheng, Wanyi Li, Haibiao Liu, Qian Zhang

Robust and Calibrated Machine Learning Models for Alzheimer's Disease Risk Prediction 758
Tianjiao Wang

A Retrieval and Fine-tuning based Approach for Information Extraction in Large Language Models 763
Zhaoyu Yang, Zhilong Zhao, Ge Ding, Chenxiao Wu, Tingyu Lin

Stochastic Differential Equation Diffusion for Conditional Molecular Generation in Multi-scale Latent Spaces 773
Tianjin Liu

A Diagnostic Stress-Test Framework for Exogenous Variable Reliability in Transformer-based Time Series Forecasting 777
Yuhao Song, Chang Wang

Water Cut Prediction of Oil Wells in High Water-Cut Period Using DBO-ModernTCN-Attention 781
Yunlong Ning, Ying Cuan

Bidirectional Graph Fusion of Functional Brain Networks and Genetic Data 785
Yi Cai, Dongzhao Hong

An AI Search Method for Power Grid PC-Based Image-Text Knowledge Bases Based on Multimodal Large Language Models 790
Yujie Lin, Jingjing Huang

Measuring Bias Sensitivity Across Multiple Domains Commonly Used in Legal Applications Generated by LLMs Through Parameter Variation 794
Hejun Xiao

Research on Global Convergence and On-Demand Discovery Technologies for Data Resource Views Driven by Data Virtualization 801
Yun Bai, Xu Liu, Pan Fan, Wenxi Zeng, Yan Gao, Jiao Ding, Wenyang Tan

Research on a Question Answering System for Complex Heterogeneous Statistical Documents Based on Large Language Models 810
Chenfei Ma, Chen Peng

Research on Evidence-Relation Constraint Methods for Hallucinations in Sentiment Analysis 816
Feimeng Si

Heterogeneous Temporal Graph Transformer for Social Bot Detection 822
Ganlin Xie, Xiaofeng Wang

BCA-Net: A Dual-Branch Network with Channel Attention for Lithium-Ion Battery Remaining Useful Life Prediction 829
Lingzhi Tian, Guihong Li, Da Guo, Tao Fan, Qiang Liu, Meng Wang

DocParamEx: Configuration-Driven Parameter Extraction and Span Grounding for Enterprise Technical Documents 833
Leilei Zhang, Zhenzhen Sun, Yurong Bai, Yanyan Lu, Ru Zeng, Hanzhi Zhang, Wenlin Fu

AI-Based Trusted Governance and Value Allocation Mechanism for Data Elements under the Data Trust Model 841
Yingwei Liang, Yuping Yan, Taipeng Zhu

Integrating Cross-Dimensional Attention with State Space Models for Lithium-Ion Battery Degradation Trajectory Prediction 847
Guodong Guan, Guodong Zhao

Influential User Identification in Social Networks Based on Spark GraphX 851
Yichen Li

Hybrid Intelligent System Integrating Pearson Feature Selection and Evolutionary Deep Learning for Settlement Time-Series Prediction 856
Zhao Liu, Xiangxing Kong

Cold-Start Human Mobility Prediction via Cross-Semantic Attention Mechanism 860
Rui Zou

From Factory of the World to Innovation Powerhouse: A Computational Linguistics Analysis of China’s Manufacturing Policy Attention 865
Jiangwei Liu, Yihao Guo, Yaqi Wang, Shuaiyang Lu, Lanlan Zhang, Chunhang Wei

Cross-Domain Data Exchange in Urban Governance: A Semantic Knowledge Graph-Driven Survey 872
Yan Zhang, Shuai Lu, Chang Wang, Song Xin

Selection and Comparative Evaluation of Collaborative Imputation Techniques for Missing Harmonic Data in 10 kV Distribution Areas under Heterogeneous Communication Conditions 883
Yongjie Tong, Mengqing Zhao, Tianyi Zhang, Xu Gong, Ling Xie

Defensive-Pressure-Aware Expected Goals Estimation via Feature-Embedded Feed-Forward Neural Network 887
Wanglong Pei, Ammar Hawbani, Chengpu Li, Liang Zhao

PADER: Policy-Aware Demand-Evidence Retrieval Model for Regional Resume Matching 894
Xinyu Wang, Dingyun Lou

ID-HRAG: Identity Aware Hierarchical Retrieval for Multi-Identity Interaction 898
Dingyun Lou, Xinyu Wang

Graph Neural Network-Based Anomaly Detection and Behavioral Modeling for Dynamic Large-Scale Data Streams 902
Ziliao Zhang

Research on Dynamic Prediction of Construction Schedule Based on TCN-BiGRU-Transformer 906
Yanfang Wu, Zheng Han, Xiaoyue Fu, Nengjie Ma

DQ-MCTR: Data Quality-Aware Multimodal Click-Through Rate Prediction for Online Advertising 912
Zouxiaowei Ma, Ziruo Ke, Li Tang, Zhen Bian, Xin Ren