Conference Program

2022 International Conference on Neural Computing for Advanced Applications

8-10 July, 2022
Jinan, China
https://dl2link.com/ncaa2022/

Organised by	**University of Jinan**
Co-Organised by	**Shandong Jianzhu University**
Published by	**Springer**
	Cancer Innovation
Sponsored by	**Guangzhou XingBeiChuang Technology co., Ltd.**
	Guangzhou WisTalk Information Technology co., Ltd.

请所有线下参会者严格遵守各地的疫情防控政策与规定，自愿选择线上线下参会，会议期间的疫情安全由参与者本人负责。

Dear Guests and colleagues of the NCAA 2022,

Neural computing and artificial intelligence have become the hottest topics in recent years. To promote multi-disciplinary development and application of neural computing, a series of NCAA conferences was initiated on the theme of "Make Research Practical", to provide an open platform for academic discussions, industrial showcases, and basic training tutorials. This event mainly contains the papers accepted at the 2022 International Conference on Neural Computing for Advanced Applications (NCAA 2022). NCAA 2022 is co-organized by University of Jinan and Shandong Jianzhu University, and it was published by Springer and Cancer Innovation. The mainstream NCAA 2022 conference maintained the form of a hybrid event with online and offline participants, in which people could freely connect to a live broadcast of the keynote speeches and presentations.

NCAA 2022 collates 77 high-quality papers that were selected for publication from 205 submissions after double-blinded peer-review, which indicates that the acceptance rate of NCAA 2022 was less than 38%. These papers were categorized into 8 technical tracks: neural network (NN) theory, NN-based control systems, neuro-system integration and engineering applications; machine learning and deep learning for data mining and data-driven applications; computational intelligence, nature-inspired optimizers, and their engineering applications; neuro/fuzzy systems, multi-agent control, decision making, and their applications in smart manufacturing; deep learning-driven pattern recognition, computer vision and its industrial applications; natural language processing, knowledge graphs, recommender systems, and applications; neural computing-based fault diagnosis and forecasting, prognostic management, and cyber-physical system security; sequence learning for spreading dynamics, forecasting, and intelligent techniques against epidemic spreading.

The authors of each paper in this event have reported their novel results of computing theory or application. These results cannot cover all aspects of neural computing and advanced applications, but we hope it will inspire insightful thoughts for readers and researchers. We continue to wish that more secrets of AI will be unveiled, and that academic research will promote more practical applications. Many people contributed to making the conference possible and successful. Firstly, we thank all the authors who have considered NCAA 2022 for their submissions. We also thank the PC members for their evaluations that made possible the selection of the accepted papers. Finally, we wish everyone to stay healthy and safe.

Yours sincerely,

Dr. Haijun Zhang, Dr. Yuehui Chen, Dr. Zhao Zhang
General Co-Chairs of NCAA 2022

Dr. Tianyong Hao, Dr. Zhou Wu, Dr. Yimin Yang
Program Co-Chairs of NCAA 2022

NCAA 2022 Honorary Chairs:

1、John MacIntyre, University of Sunderland, UK

2、Tommy W. S. Chow, City University of Hong Kong, HK SAR, China

NCAA 2022 General Co-Chairs:

1、Haijun Zhang, Harbin Institute of Technology, China

2、Yuehui Chen, University of Jinan, China

3、Zhao Zhang, Hefei University of Technology, China

NCAA 2022 Program Co-Chairs:

1、Tianyong Hao, South China Normal University, China

2、Zhou Wu, Chongqing University, China

3、Yimin Yang, University of Western Ontario, Canada

NCAA 2022 Organizing Committee Co-Chairs:

1、Yongfeng Zhang, University of Jinan, China

2、Yunchu Zhang, Shandong Jianzhu University, China

3、Choujun Zhan, Nanfang College · Guangzhou, China

4、Mingbo Zhao, Donghua University, China

Local Arrangement Co-Chairs:

Menghua Zhang, University of Jinan, China

Weijie Huang, University of Jinan, China

Ming Wang, Shandong Jianzhu University, China

Chengdong Li, Shandong Jianzhu University, China

Xiangping Zhai, Nanjing University of Aeronautics and Astronautics, China

Registration Co-Chairs:

Yaqing Hou, Dalian University of Technology, China

Jing Zhu, Macau University of Science and Technology, China

Shuqiang Wang, Chinese Academy of Sciences, China

Weiwei Wu, Southeast University, China

Zhili Zhou, Nanjing University of Information Science and Technology, China

Publication Co-Chairs:

Kai Liu, Chongqing University, China

Yu Wang, Xi'an Jiaotong University, China

Yi Zhang, Fuzhou University, China

Bo Wang, Huazhong University of Science and Technology, China

Xianghua Chu, Shenzhen University, China

Publicity Co-Chairs:

Liang Feng, Chongqing University, China

Penglin Dai, Southwest Jiaotong University, China

Dong Yang, University of California, Merced, USA

Shi Cheng, Shaanxi Normal University, China

Reza Maleklan, Malmö University, Sweden

Sponsor Co-Chairs:

Wangpeng He, Xidian University, China

Bingyi Liu, Wuhan University of Technology, China

Cuili Yang, Beijing University of Technology, China

Jicong Fan, The Chinese University of Hong Kong, Shenzhen, China

NCAA Steering Committee Liaison:

Jingjing Cao, Wuhan University of Technology, China

Web Chair:

Xinrui Yu, Harbin Institute of Technology, China

Track Co-Chairs:

Track 1: Neural network (NN) theory, NN-based control systems, neuro-system integration and engineering applications

Zenghui Wang, University of South Africa, South Africa

Chengqing Li, Xiangtan University, China

Yongji Wang, Huazhong University of Science and Technology, China

Yihua Hu, University of York, UK

Track 2: Machine learning and deep learning for data mining and data-driven applications

Li Zhang, Soochow University, China

Zhao Kang, University of Electronic Science and Technology, China

Sheng Li, University of Georgia, USA

Track 3: Computational intelligence, nature-inspired optimizers, and their engineering applications

Zhile Yang, Chinese Academy of Sciences, SIAT, China

Xiaozhi Gao, University of Eastern Finland, Finland

Xin Zhang, Tianjin Normal University, China

Track 4: Neuro/fuzzy systems, multi-agent control, decision making, and their applications in smart manufacturing

Dongrui Wu, Huazhong University of Science and Technology, China

Zhaohong Deng, Jiangnan University, China

Qiang Jia, Jiangsu University, China

Track Co-Chairs:

Track 5: Deep learning-driven pattern recognition, computer vision and its industrial applications

Zhong Ji, Tianjin University, China

Bineng Zhong, Huaqiao University, China

Xiangyuan Lan, Hong Kong Baptist University, HK SAR, China

Track 6: Natural language processing, knowledge graphs, recommender systems, and their applications

Christine Ji, The University of Sydney, Australia

Haitao Wang, China National Institute of Standardization, China

Wenxiu Xie, City University of Hong Kong, HK SAR, China

Zhiying Tu, Harbin Institute of Technology, China

Track 7: Neural computing-based fault diagnosis and forecasting, prognostic management, and cyber-physical system security

Binqiang Chen, Xiamen University, China

Yizhen Peng, Chongqing University, China

Weizhi Meng, Technical University of Denmark, Denmark

Track 8: Sequence learning for spreading dynamics, forecasting, and intelligent techniques against epidemic spreading

Choujun Zhan, South China Normal University, China

Wei Huang, Zhejiang University of Technology, China

Dong Yang, University of California, Merced, USA

Silver Sponsors (银牌赞助)

广州星倍创科技有限公司

广州智语信息科技有限公司

Tentative Rundown on 8 July 2022 (Friday)

Time	Event	Duration
A.M.	Check In	
Lunch		
14:00-15:20	Tutorial 1 from Dr. Likeng Liang: Medical Concept Normalization Based on Neural Network ‐ Hosted by Prof. Mingbo Zhao	80mins
15:20-16:40	Tutorial 2 from Dr. Jicong Fan: Recent Advances of Missing Data Imputation ‐ Hosted by Prof. Mingbo Zhao	80mins
16:40-18:00	Competition Session hosted by Prof. Zhou Wu: ‐ Awarding by Prof. Zhou Wu ‐ Presentation and discussion by winners	80mins
END		

04 Program Overview

Tentative Rundown on 9 July 2022 (Saturday)

Time	Event	Duration
8:00-9:00	Conference Sign-In	
9:00-9:20	Opening Speech from Prof. Haijun Zhang Opening Speech from Prof. Yuehui Chen	20mins
9:20-9:30	Conference Introduction from Prof. Tianyong Hao	10mins
9:30-9:45	Group Photo	15mins
9:45-10:30	Keynote Speech 1 from Prof. Yongduan Song: Neuroadaptive PID Control with Application to Unmanned Systems – Hosted by Prof. Haijun Zhang	45mins
10:30-10:35	Q&A of Keynote Speech 1	5mins
10:35-10:55	Coffee Break	20mins
10:55-11:40	Keynote Speech 2 from Prof. Kim-Fung Tsang: Internet of Things Maturity Index Elevating Digital Economy – Hosted by Prof. Zhou Wu	45mins
11:40-11:45	Q&A of Keynote Speech 2	5mins
11:50-13:30	Lunch Break	
14:00-16:00	Session A1: PPT Report	10mins per author
14:00-16:00	Session A2: PPT Report	10mins per author
14:00-16:00	Session A3: PPT Report	10mins per author
16:10-17:30	Women Scientists Forum – Hosted by Prof. Jingjing Cao	80mins
18:10-20:30	Dinner Time	
	END	

Tentative Rundown on 10 July 2022 (Sunday)

Time	Event	Duration
9:00-9:45	Keynote Speech 1 from Prof. Cheng-Lin Liu: Deep Prototype Learning for Classification and Generalization in Open World – Hosted by Prof. Zhao Zhang	45mins
9:45-9:50	Q&A of Keynote Speech 1	5mins
9:50-10:35	Keynote Speech 2 from Prof. Tao Song: When Artificial Intelligence Meets Drug Discovery – Hosted by Prof. Tianyong Hao	45mins
10:35-10:40	Q&A of Keynote Speech 2	5mins
10:40-10:55	Coffee Break	15mins
10:55-11:40	Keynote Speech 3 from Prof. Xiaowei Jia: Physics Guided Machine Learning for Scientific Knowledge Discovery – Hosted by Prof. Zhou Wu	45mins
11:40-11:45	Q&A of Keynote Speech 3	5mins
11:50-13:30	**Lunch Break**	
14:00-16:20	Session B1: PPT Report	10mins per author
14:00-16:20	Session B2: PPT Report	10mins per author
14:00-16:20	Session B3: PPT Report	10mins per author
16:30-17:00	Closing Ceremony: – Awarding for Best Paper by Prof. Chengdong Li – Awarding for Best Service by Prof. Zhou Wu – Summary Speech from Prof. Zhao Zhang	30mins
END		

Opening

Date & Time: July 9th (Saturday), 9:00-9:30
Venue: Hilton Hotel, Jinan
Host: Ms. Xiao Zhang

1. **Opening Speech from Prof. Haijun Zhang, General Chair of NCAA 2022**

2. **Opening Speech from Prof. Yuehui Chen, Vice President of Jinan University**

3. **Conference Introduction from Prof. Tianyong Hao, Program Chair of NCAA 2022**

Keynote Speech

Date & Time: July 9th (Saturday), 9:45-11:45
Venue: Hilton Hotel, Jinan
Host: Prof. Haijun Zhang, Prof. Zhou Wu

1. **Keynote speech: Neuroadaptive PID Control with Application to Unmanned Systems**
   Prof. Yongduan Song
   Time: 9:45-10:35

2. **Keynote speech: Internet of Things Maturity Index Elevating Digital Economy**
   Prof. Kim-Fung Tsang
   Time: 10:55-11:45

Session A1

Date & Time: July 9th (Saturday), 14:00-16:00
Venue: Hilton Hotel, Jinan
Chair: Dr. Likeng Liang, Dr. Wenxiu Xie, Dr. Haitao Wang

Natural language processing, knowledge graphs, recommender systems, and their applications

1. (14:00-14:10) **Heterogeneous Adaptive Denoising Networks for Recommendation**
   Sichen Jin, Yijia Zhang and Mingyu Lu

2. (14:10-14:20) **A collaborators recommendation method based on multi-feature fusion**
   Qi Yuan, Lujiao Shao, Xinyu Zhang, Xinrui Yu, Huiyue Sun, Jianghong Ma, Weizhi Meng, Xiao-Zhi Gao and Haijun Zhang

3. (14:20-14:30) **Item-Behavior Sequence Session-based Recommendation**
   Wangshanyin Zhao, Xiaohong Xiang, Xin Deng, Wenxing Zheng and Hao Zhang

4. (14:30-14:40) **Recommendation Method of Cross-Language Computer Courses**
   Jiajun Ou, Lin Zhou, Zhenzhen Li and Shaohong Zhang

5. (14:40-14:50) **Data-driven recommendation model with meta-learning Autoencoder for algorithm selection**
   Xianghua Chu, Yongsheng Pang, Jiayun Wang, Yuqiu Guo, Yuanju Qu and Yangpeng Wang

6. (14:50-15:00) **A Span-based Joint Model for Measurable Quantitative Information Extraction**
   Di Mo, Bangrui Huang, Haitao Wang, Xinyu Cao, Heng Weng and Tianyong Hao

Neuro/fuzzy systems, multi-agent control, decision making, and their applications in smart manufacturing

7. (15:00-15:10) **Adaptive Fuzzy Distributed Formation Tracking for Second-order Nonlinear Multi-agent Systems with Prescribed Performance**
   Binghe An, Zongzhun Zheng, Bo Wang, Huijin Fan, Lei Liu and Yongji Wang

8.

9.

10.

11.

12.

Session A2

Date & Time: July 9th (Saturday), 14:00-16:00
Venue: Hilton Hotel, Jinan
Chair: Dr. Weiwei Wu, Dr. Liang Feng, Dr. Yaqing Hou

Computational intelligence, nature-inspired optimizers, and their engineering applications

1. (14:00-14:10) **Cross elitist learning multifactorial evolutionary algorithm**
   Wei Li, Haonan Luo and Lei Wang

2. (14:10-14:20) **RPCA-induced Graph Tensor Learning for Incomplete Multi-view Inferring and Clustering**
   Xingfeng Li, Yinghui Sun, Zhenwen Ren and Quansen Sun

3. (14:20-14:30) **TRUST-TECH Assisted GA-SVM Ensembles and its Applications**
   Yong-Feng Zhang, Hsiao-Dong Chiang, Yun-Fei Qu and Xiao Zhang

4. (14:30-14:40) **Path planning for mobile robots based on improved A* algorithm**
   Yuxiang Hou, Huanbing Gao, Zijian Wang and Chuansheng Du

5. (14:40-14:50) **A dominance-based many-objective artificial bee colony algorithm**
   Tingyu Ye, Hui Wang, Tao Zeng, Zichen Wei, Shuai Wang, Hai Zhang, Jia Zhao and Min Hu

6. (14:50-15:00) **Analysis of Autoencoders with Vapnik-Chervonenkis Dimension**
   Weiting Liu and Yimin Yang

7. (15:00-15:10) **A Multi-Surrogate-Assisted Artificial Bee Colony Algorithm for Computationally Expensive Problems**
   Tao Zeng, Hui Wang, Tingyu Ye, Wenjun Wang and Hai Zhang

8. (15:10-15:20) **Many-objective artificial bee colony algorithm based on decomposition and dimension learning**
   Shuai Wang, Hui Wang, Zichen Wei, Jiali Wu, Jiawen Liu and Hai Zhang

9. (15:20-15:30) **Large Parallax Image Stitching via Structure Preservation and Multi-Matching**
   Yuanyuan Chen, Wanli Xue and Shengyong Chen

10. (15:30-15:40) **Many-objective evolutionary algorithm based on dominance and objective space decomposition**
Zichen Wei, Hui Wang, Tingyu Ye, Shuai Wang, Jiali Wu, Jiawen Liu and Hai Zhang

11. (15:40-15:50) **A Survey of Optimal Design of Antenna (Array) by Evolutionary Computing Methods**
Xin Zhang and Zhou Wu

12. (15:50-16:00) **An Improved Weighted QMIX based on Weight Function with Q-Value**
Tianyu Li and Fei Han

Session A3

Date & Time: July 9th (Saturday), 14:00-16:00
Venue: Hilton Hotel, Jinan
Chair: Dr. Yu Wang, Dr. Li Zhang, Dr. Bingyi Liu

Machine learning and deep learning for data mining and data-driven applications

1. (14:00-14:10) **TE-BiLSTM: Improved Transformer and BiLSTM on Fraudulent Phone Text Recognition**
   Hongkui Xu, Junjie Zhou, Tongtong Jiang, Jiangkun Lu and Zifeng Zhang

2. (14:10-14:20) **Laplacain pair-weight vector projection with adaptive neighbor graph for semi-supervised learning**
   Yangtao Xue and Li Zhang

3. (14:20-14:30) **Extracting Key Information from Shopping Receipts by Using Bayesian Deep Learning via Multi-modal Features**
   Jiaqi Chen, Lujiao Shao, Haibin Zhou, Jianghong Ma, Weizhi Meng, Zenghui Wang and Haijun Zhang

4. (14:30-14:40) **Multi-view Spectral Clustering with High-order Similarity Learning**
   Mei Yanying, Ren Zhenwen, Wu Bin and Shao Yanhua

5. (14:40-14:50) **TextSMatch: Safe Semi-Supervised text classification with domain adaption**
   Yibin Xu, Ge Lin, Nanli Zeng, Yingying Qu and Kun Zeng

6. (14:50-15:00) **Temperature Prediction of Medium Frequency Furnace Based on Transformer Model**
   Shifeng Ma, Yanping Li, Dongyue Luo and Taotao Song

7. (15:00-15:10) **Dynamic Community Detection via Adversarial Temporal Graph Representation Learning**
   Changwei Gong, Changhong Jing, Yanyan Shen and Shuqiang Wang

8. (15:10-15:20) **Feature Selection for High-Dimensional Data Based on a Multi-Objective Particle Swarm Optimization with Self-adjusting Strategy Pool**
   Yingyu Peng, Ruiqi Wang, Dandan Yu and Yu Zhou

9. (15:20-15:30) **Research on Non-intrusive Household Load Identification Method Applying LightGBM**
   Zhiwei Kong, Jiachuan Shi, Rao Fu and Wenbin Ci

10.(15:30-15:40) **Traffic Congestion Event Mining Based on Trajectory Data**

Yanfei Li, Nianbo Hu, Chen Wang and Rui Zhang

11.(15:40-15:50) **Data Enhancement Method Based on Generative Adversarial Network for Small Transimission Line Detection**

Wenkong Wang, Weijie Huang, Hongnan Zhao, Menghua Zhang, Jia Qiao and Yong Zhang

12.(15:50-16:00) **An Improved Ensemble Classification Algorithm for Imbalanced Data with Sample Overlap**

Yafei Zhang and Fei Han

Women Scientists Forum

Date & Time: July 9th (Saturday), 16:10-17:30
Venue: Hilton Hotel, Jinan
Host: Prof. Jingjing Cao

1. **Title: Cloud Native Database Backup**
   Speaker: Cuiyun Fu, Alibaba Corporation
   Time: 16:10-16:20

2. **Title: Data-driven Security Control Against Network Attacks**
   Speaker: Weiwei Che, Qingdao University
   Time: 16:20-16:30

3. **Title: System-level Design and Optimization for NVP Systems**
   Speaker: Mengying Zhao, Shandong University
   Time: 16:30-16:40

4. **Title: Modeling and Nonlinear Control for Doule-pendulum Tower Crane Systems**
   Speaker: Menghua Zhang, University of Jinan
   Time: 16:40-16:50

5. **Title: Intelligent Sense and Recognition for Human Activity**
   Speaker: Jingjing Cao, Wuhan University of Technology
   Time: 16:50-17:00

6. **Roundtable Forum**
   Time: 17:00-17:30

Keynote Speech

Date & Time: July 10th (Sunday), 9:00-11:45
Venue: Hilton Hotel, Jinan
Host: Prof. Zhao Zhang, Prof. Tianyong Hao, Prof. Zhou Wu

1. **Keynote speech: Deep Prototype Learning for Classification and Generalization in Open World**
    Prof. Cheng-Lin Liu
    Time: 9:00-9:50

2. **Keynote speech: When Artificial Intelligence Meets Drug Discovery**
    Prof. Tao Song
    Time: 9:50-10:40

3. **Keynote speech: Physics Guided Machine Learning for Scientific Knowledge Discovery**
    Prof. Xiaowei Jia
    Time: 10:55-11:45

Session B1

Neural network (NN) theory, NN-based control systems, neuro-system integration and engineering applications

1. (14:00-14:10) **An Improved Partition Filter Network for Entity-Relation Joint Extraction**
   Zhenjie Huang, Likeng Liang, Xiaozhi Zhu, Heng Weng, Jun Yan and Tianyong Hao

2. (14:10-14:20) **Container lead seal detection based on Nano-CenterNet**
   Gang Zhang, Jianming Guo, Qing Liu and Haotian Wang

3. (14:20-14:30) **Deep Echo State Network based Neuroadaptive Control for Uncertain Systems**
   Baolei Xu and Qing Chen

4. (14:30-14:40) **A Novel Trajectory Tracking Controller for UAV with Uncertainty Based on RBF and Prescribed Performance Function**
   Xuelei Qi, Chen Li and Hongjun Ma

5. (14:40-14:50) **Master Multiple Real-Time Strategy Games with a Unified Learning Model Using Multi-Agent Reinforcement Learning**
   Bo Ling, Xiang Liu, Jin Jiang, Weiwei Wu, Wanyuan Wang, Yan Lyu and Xueyong Xu

6. (14:50-15:00) **A Dual-size Convolutional Kernel CNN-based Approach to EEG Signal Classification**
   Kai Zhao and Nuo Gao

7. (15:00-15:10) **Short-Term Wind Power Prediction Based on Convolutional Neural Network-Bidirectional Long Short-Term Memory Network**
   Qi Wang, Zheng Xin and Xingran Liu

8. (15:10-15:20) **Fault Arc Detection Method Based on Multi Feature Analysis and PNN**
   Chao Li, Jiachuan Shi, Jiankai Ma, Rao Fu and Jin Zhao

9. (15:20-15:30) **Design of AUV Control System Based on BP Neural Network And PID**
   Tengguang Kong, Huanbing Gao, Shoufeng Yao and Xiuxian Chen

10. (15:30-15:40) **LCSW: A Novel Indoor Localization System based on CNN-SVM Model with WKNN in Wi-Fi Environments**
   Xuhui Wang, Xin Deng, Hao Zhang, Kai Liu and Penglin Dai

11. (15:40-15:50) **Cage mass center capture for whirl analysis using an improved MultiResUNet from the multimodal biomedical image segmentation**
   Zhaohui Yang, Xiaoliang Niu, Tianhua Xiong and Ningning Zhou

12. (15:50-16:00) **A Scene Perception Method Based on MobileNetV3 for Bionic Robotic Fish**
   Ming Wang, Xiaobin Du, Zheng Chang and Kunlun Wang

13. (16:00-16:10) **Improved Faster R-CNN Algorithm for Transmission Line Small Target Detection**
   Wenkong Wang, Ping Meng, Weijie Huang, Menghua Zhang, Jia Qiao and Yong Zhang

14. (16:10-16:20) **Multivariate Time Series Imputation with Bidirectional Temporal Attention-based Convolutional Network**
   Yanzhuo Lin and Yu Wang

Session B2

Sequence learning for spreading dynamics, forecasting, and intelligent techniques against epidemic spreading

1. (14:00-14:10) **Dynamic Monitoring Method Based on Comparative Study of Power and Environmental Protection Indicators**
   Xiaojiao Liang, Chunling Ma, Chuanguo Ma and Shaofei Xin

2. (14:10-14:20) **An Early Prediction and Label Smoothing Alignment Strategy for User Intent Classification of Medical Queries**
   Yuyu Luo, Zhenjie Huang, Leung-Pun Wong, Choujun Zhan, Fu Lee Wang and Tianyong Hao

3. (14:20-14:30) **Fast Dynamic Response Based on Active Disturbance Rejection Control of Dual Active Bridge DC-DC Converter**
   Zongfeng Zhang, Ao Fu, Guofeng Tian, Fan Gong, Rui Zhang, Yu Xing, Yue Sun, Yulan Chen and Xingong Cheng

4. (14:30-14:40) **Multi-layer Echo State Network with Nonlinear Vector Autoregression Reservoir for Time Series Prediction**
   Heshan Wang, Yuxi Liu, Dongshu Wang, Yong Luo and Jianbin Xin

5. (14:40-14:50) **A new unified control approach for finite-/fixed-time synchronisation of multi-weighted dynamical networks**
   Shi Jinyao, Cai Shuiming and Jia Qiang

6. (14:50-15:00) **Design of portrait system for road safety based on a dynamic density clustering algorithm**
   Chenxing Li, Yongchuan Cui and Chengyu Hu

7. (15:00-15:10) **An ensemble deep learning model based on Transformers for long sequence time-series forecasting**
   Jie Chu, Jingjing Cao and Yujia Chen

8. (15:10-15:20) **Bayesian Optimization-based Seq2Seq network models for real estate price prediction in Hong Kong**
   Yonglin Liu, Zeqiong Wu, Choujun Zhan and Hu Min

9. (15:20-15:30) **Ensemble Learning for Crowdfunding Dynamics: JingDong Crowdfunding Projects**
   Hu Min, Kaihan Wu, Minghao Tan, Junyan Lin, Yufan Zheng and Choujun Zhan

Neural computing-based fault diagnosis and forecasting, prognostic management, and cyber-physical system security

10. (15:30-15:40) **Observer-Based Adaptive Security Control for Network Control Systems Under TDS Actuator Attacks**
    Liang Wang and Ping Zhao

11. (15:40-15:50) **A multi-channel fusion method based on tensor for rolling bearing fault diagnosis**
    Jiang Huiming, Li Song, Shao Yunfei, Yuan Jing, Zhao Qian and Chen Jin

12. (15:50-16:00) **Multi-layer integrated extreme learning machine for mechanical fault diagnosis in high-voltage circuit breaker**
    Xiaofeng Li, Tao Zhang, Wenyong Guo and Sheng Wang

13. (16:00-16:10) **Wind power forecast based on multiple echo states**
    Shaoxiong Zeng, Ruiqi Jiang, Zhou Wu, Xianming Ye and Zenghui Wang

14. (16:10-16:20) **Load Forecasting Method for Park Integrated Energy System Considering Multi-Energy Coupling**
    Xin Huang, Xin Ma, Yanping Li and Chunxue Han

Session B3

Date & Time: July 10th (Sunday), 14:00-16:20
Venue: Hilton Hotel, Jinan
Chair: Dr. Mingbo Zhao, Dr. Jicong Fan, Dr. Jingjing Cao

Deep learning-driven pattern recognition, computer vision and its industrial applications

1. (14:00-14:10) **Formation Control Optimization via Leader Selection for Rotor Unmanned Aerial Vehicles**
   Bu Liu, Xiangping Zhai, Bin Du and Jing Zhu

2. (14:10-14:20) **ML-TFN: Multi Layers Tensor Fusion Network For Affective Video Content Analysis**
   Qi Wang, Xiaohong Xiang, Jun Zhao and Xiaoyu Ding

3. (14:20-14:30) **Bolt loosening detection based on principal component analysis and support vector machine**
   Shiwei Wu, Sisi Xing, Fei Du and Chao Xu

4. (14:30-14:40) **Detection and Identification of Digital Display Meter of Distribution Cabinet Based on YOLOv5 Algorithm**
   Yanfei Zhou, Yunchu Zhang, Chao Wang, Shaohan Sun and Jimin Wang

5. (14:40-14:50) **Fingerprint Liveness Detection Based on Broad Learning with Uniform Local Binary Pattern**
   Chengsheng Yuan, Mingyu Chen and Zhili Zhou

6. (14:50-15:00) **Combustion State Recognition Method in Municipal Solid Waste Incineration Process Based on Improved Deep Forest**
   Xiaotong Pan, Jian Tang, Heng Xia, Weitao Li and Haitao Guo

7. (15:00-15:10) **Human Instance Segmentation and Tracking via Data Association and Single-stage Detector**
   Lu Cheng, Mingbo Zhao and Jicong Fan

8. (15:10-15:20) **An Improved Convolutional Neural Network Model by Multiwavelets for Rolling Bearing Fault Diagnosis**
   Gangxing Ren, Jing Yuan and Fengxian Su

9. (15:20-15:30) **Research on Visual Servo Control System of Substation Insulator Washing Robot**
   Zhipeng Li, Shouyin Lu, Jiang Zhe, Shiwei Yu and Qiang Zhang

10. (15:30-15:40) **A Perception Method Based on Point Cloud Processing in Autonomous Driving**
    Qiuqin Huang, Jiangshuai Huang, Xingyue Sheng and Xiaowen Yue

11. (15:40-15:50) **Two-Stream 3D MobileNetV3 for Pedestrians Intent Prediction Based on Monocular Camera**

    Yi Jiang, Weizhen Han, Luyao Ye, Yang Lu and Bingyi Liu

12. (15:50-16:00) **UAV-assisted Blind Area Pedestrian Detection via Terminal-Edge-Cloud Cooperation in VANETs**

    Qisen Zhang, Kai Liu, Luyao Jiang, Chengliang Zhong, Liang Feng, Hao Zhang and Ke Xiao

13. (16:00-16:10) **Vehicle Re-identification via Spatio-temporal Multi-Instance Learning**

    Xiang Yang, Chunjie Li, Qingwei Zeng, Xiu Pan, Jing Yang and Hongke Xu

Closing Ceremony

Date & Time: July 10th (Sunday), 16:30-17:00
Venue: Hilton Hotel, Jinan
Host: Ms. Xiao Zhang

1. **Awarding Session, hosted by Prof. Chengdong Li, Prof. Zhou Wu**

2. **Summary Speech from Prof. Zhao Zhang, General Co-Chair of NCAA 2022**

NCAA 2022

International Conference on Neural Computing for Advanced Applications

Thank You!

Thank you for attending the NCAA 2022!

WeChat Account

Appendix: Tencent Meeting Room Arrangement

Date	Time	Event	Conference ID	Password	Conference ID (back-up)
July 8	14:00-16:40	Tutorial	722-754-314	220708	592-795-476
	16:40-18:00	Competition Session	621-910-945		566-683-396
July 9	09:00-11:45	Opening & Keynote Speech	590-669-346	220709	709-773-311
	14:00-16:00	Session A1	817-432-857		147-521-989
	14:00-16:00	Session A2	850-376-505		489-241-600
	14:00-16:00	Session A3	882-711-204		583-575-017
	16:10-17:30	Women Scientists Forum	372-137-734		464-198-477
July 10	09:00-11:45	Keynote Speech	794-690-387	220710	129-693-745
	14:00-16:20	Session B1	809-819-175		831-551-552
	14:00-16:20	Session B2	606-178-457		877-365-999
	14:00-16:20	Session B3	940-264-086		740-950-546
	16:30-17:00	Closing Ceremony	231-706-020		964-828-983