

Final Program

22nd IEEE/ACIS International Hybrid Conference on Computer and Information Science

(ICIS 2022)

June 26-28, 2022, Zhuhai, China



Sponsored by International Association for Computer and Information Science (ACIS)

In cooperation with the University of Saint Joseph; Zhuhai College of Science and Technology, China

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Renaissance Zhuhai Zhonghai Hotel

Website: www.zwbqh.com

rogram at a Glance

Renaissance Zhuhai Zhonghai Hotel

Sunday June 26, 2022

08:30-15:30	Registration	
9:00-10:00	Room 1	
	Opening Ceremony	
10:00-11:50	Room 1	
	Keynote Address	
12:00-13:00	Lunch	
13:00-15:00	Room 1	Room 2
	Regular Session 1: (6 presentations)	Regular Session 2: (6 presentations)

15:00-15:30	Coffee Break	
15:30-17:30	Room 1	Room 2
	Regular Session 3: (6 presentations)	Regular Session 4: (6 presentations)

Monday June 27, 2022, Renaissance Zhuhai Zhonghai Hotel

08:30-15:30	Registration	
9:00-10:00	Room 1	Room 2
	Regular Session 5: (3 presentations)	Regular Session 6: (3 presentations)
10:00-10:30	Coffee Break	
10:30-11:50	Room 1	Room 2
	Regular Session 7: (4 presentations)	Regular Session 8: ICS2022 (3 presentations)
12:00-13:00	Lunch	
13:00-15:00	Room 1	Room 2
	Workshop ICS 2022-1 (6 presentations)	Workshop ICS 2022-2 (5 presentations)
15:00-15:30	Coffee Break	
15:30-17:30	Room 110:30-12:00	Room 2
	Workshop ICS 2022-3 (5 presentations)	Workshop SMAT 2022 (5 presentations)

Tuesday June 28, 2022, Renaissance Zhuhai Zhonghai Hotel

9:00-11:00	Room 1	Room 2
	Regular Session 9: (6 presentations)	Regular Session 10: (6 presentations)
11:00-11:30	Room 1	
	Technical Forum / Closing Remarks	

Keynote Address:

Sparse Kernel Representations

Tao Qian Ph. D

Director of Macau Center for Mathematical Sciences

Professor, Macau University of Science and Technology, China

tqian@must.edu.mo

Abstract

In computer and information science one seeks for efficient representations of signals. While the basis type, or in other words those associated with transformations such as the Fourier and wavelet, is classical and standard, the non-basis type is a novel idea and generates sparse representations with fast convergence. In the lecture we will give an account on the latest and new developments of the sparse and stochastic sparse representations in reproducing kernel Hilbert spaces, and more generally in Hilbert spaces with a dictionary.

Biography

Tao Qian, graduated from Peking University in 1984 with Doctor degree. 1984-1986 postdoctoral work in Institute of mathematics, Chinese Academy of Sciences. From 1986 to 1992, he worked as postdoctoral fellow at Macquarie University and Flinders University. 1992-2000 lecturer at the University of New England, Australia. From 2000 to now, he worked as Associate Professor, Professor, Distinguished Professor and Chair of Department of Mathematics at the University of Macau. From 2019 to now, he has been Professor of Macau University of Science and Technology and director of Macau Center for Mathematical Sciences. Research interests include harmonic analysis, signal analysis, complex analysis of single and several complex variables, quaternionic and Clifford analysis. In recent years, his main research interests include mono-component function theory and adaptive Fourier decomposition. Based on his study on "adaptive positive frequency decomposition and algorithm implementation of transient signals" he won the first prize of Macau Natural Science in 2012. His research results have found ample applications in signal and image analysis and system identification. So far, he has published more than 200 papers in international mathematical and computer science journals and three monograph books, and served as the editorial board of SCI mathematical journals MMAS, CAOT and CVEE.

Program in Detail

Renaissance Zhuhai Zhonghai Hotel

Virtual meeting software: Microsoft Teams

Virtually Attending Link	
Room 1	Room 2
https://teams.live.com/join/953585654710	https://teams.live.com/join/9588060963399
Monday June 27, 2022 15:30-17:30 SMTA2022 Workshop https://meeting.tencent.com/dm/RuJy17y5OE5c	

Sunday, June 26, 2022

Host: Dr. Li Weijun

09:00 - 10:00 – Opening Ceremony

Host: Dr. Li Weijun

Speaker: Prof Keith Morrison, General Chair, University of Saint Joseph, Macao, China, **Room 1 & Virtual**

10:00 - 11:50 – Keynote Address

Room 1 & Virtual

11:50 - 13:00 – Break

13:00 - 15:00 – Regular Session 1

Room 1 & Virtual

Chair: TBC Dr. Joao Alexandre Lobo

OSHA: A General-purpose and Next Generation One-way Secure Hash Algorithm,
Ripon Patgiri, National Institute of Technology Silchar, India.

A Phonetics and Semantics-Based Chinese Short Text Fusion Algorithm,
Yuchao Jiang, Xinru Li, Chuying Huang, Wei Lv and Minghe Xu Zhuhai, College of Science and Technology,
China.

Research on A Classification Algorithm of the Power System Related Objects Based on YOLOv4,
Guida Tang and Gang Zheng, School of Computer Science and Engineering, Southwest Minzu University, China.

A Swarm Intelligence Algorithm for Solving TSP Problem,
Boyu Chen, Huajun Zhang and Jinfu Du Wuhan University of Technology, China.

Recommendation Algorithm of Product Configuration based on Knowledge Graph Optimization,
Yidan Xu and Wensong Liu, State Grid Electric Power Research Institute, China.

symKrypt: A Lightweight Symmetric-Key Cryptography for Diverse Applications,
Ripon Patgiri, National Institute of Technology Silchar, India.

13:00 - 15:00 – Regular Session 2

Room 2 & Virtual

Chair: Dr. Li Weijun

A DCRC Model For Text Classification,
Zhaoquan Hao, Shengbin Liang, Suying Cheng, Jiangyong Jin and Yanqing Shen, Henan University, China.

The Novel Characterizing Method of Collective Behavior Pattern in Particle Swarm Optimization,
Xuan Wu, Jiaqi Huang, Xiaoyang Fu, You Zhou, Yanchun Liang and Chunguo Wu, College of Computer Science and Technology, Jilin University, China.

Construction and Application of the Knowledge Graph in Endangered Plants,
Haochuan Wei, Qianchi Zhang, Weixuan Gao and Xianghao Meng, Beijing Forestry University, China.

Feature Extension for Chinese Short Text Based on Tongyici Cilin,
Chuying Huang, Xinru Li, Yuchao Jiang, Wei Lv and Minghe Xu, Zhuhai College of Science and Technology, China.

Wind speed prediction based on FWA-LSTM,
Youjun Sun, Huajun Zhang and Boyu Chen, Wuhan University of Technology, China.

Hierarchical Medical Classification based on DLCF,
Mingyuan Yao, Haoran Sun, Shengbin Liang and Yanqing Shen, Henan University, China.

15:00 - 15:30 – Break

15:30 - 17:30 – Regular Session 3

Room 1 & Virtual

Chair: Dr. Dr. Li Weijun

An Integrated Single Device Framework for Combined Face Recognition and Covid-19 Detection Using Thermal Infrared Imagery,
Leyang Hu, Yichen Huang and Pushendu Kar, University of Nottingham Ningbo China.

Detection of COVID-19 Through Thermal and Voice Sensing Using Smartphone,
Zeyu Wang, Yuhua Guo, Tianqi Xia, Boyuan Ye and Pushendu Kar, University of Nottingham Ningbo China.

Performance analysis of real-time object detection on Jetson device,
Jiawei Zhu, Haogang Feng, Shida Zhong and Tao Yuan, Shenzhen University, China.

Visual marine debris detection using yolov5s for autonomous underwater vehicle,
Cheng Chin, Aloysius Bo Hui Neo And Simon See, Newcastle University, UK.

Max fusing gated recurrent units and ensemble classifier for intelligent acoustic classification,
Cheng Chin and Simon See, Newcastle University, U.K.

15:30 - 17:30 – Regular Session 4

Room 2 & Virtual

Chair: TBC Dr. Joao Alexandre Lobo

PK-BERT: Knowledge Enhanced Pre-trained Models with Prompt for Few-shot Learning,
Han Ma, Benjamin K. Ng and Chan-Tong Lam, Macao Polytechnic University, Macao.

A Fuzzy Neural Network Control Strategy for Ship Maneuvering Motion,
Jinfu Du, Huajun Zhang and Youjun Sun, School of Automation, Wuhan University of Technology, China.

Border Surveillance Based on Modern Deep Learning Methods,
Cherifa Nakkach, Amira Zrelli and Tahar Ezzedine, national school of engineers of Tunis, Tunisia.

Object Detection based on Convolutional DCGAN and CNN Deep Learning Architectures in Blood Smears Images,
Francisco Nauber Bernardo Gois, Joao Alexandre Lobo Marques, Allberson Bruno de Oliveira Dantas, Marcio Costa Santos, Jose Valdir Santiago Neto, Jose Antonio Fernandes de Macedo and Wencai Du, University of Saint Joseph, Macao.

Improvement of DGA Long Tail Problem Based on Transfer Learning,
Baoyu Fan, Yue Liu and Laurie Cuthbert, Macao Polytechnic University, Macao.

Learning Context-Aware Service Representation for Service Recommendation in Workflow Composition,

Xihao Xie, Jia Zhang, Rahul Ramachandran, Tsengdar Lee and Seungwon Lee, Southern Methodist University, China.

Monday, Monday 27, 2022

09:00 - 10:00 – Regular Session 5

Room 1 & Virtual

Chair: *Huan JinTao*

Noise Detection and Classification in Chagasic ECG Signals based on One-Dimensional Convolutional Neural Networks,

Wesley L. Caldas, Joao Paulo Do Vale Madeiro, Roberto C. Pedrosa, Joao Paulo P. Gomes, Wencai Du and Joao Alexandre Lobo Marques, Federal University of Ceará, Brazil.

Research of Super-Resolution Reconstruction based on Zooming Image Sequence,
Jing Ni, Hongchen Zhan and Jie Yuan, Nanjing University Jinling College, China.

A Novel Robust Color Tag for a Highly Efficient Soccer Robot Vision System,
Yan Sun and Shaorong Sun, Shanghai University, China.

09:00 - 10:00 – Regular Session 6

Room 2 & Virtual

Chair: *Xiao Yue*

A model of Integrating Bert and BiGRU+ Attention Dual-Channel Mechanism for Investor Sentiment Analysis of Stock Price Forecast,

Huawei Ma, Jixin Ma and Shengbin Liang, Beijing Institute of Technology Zhuhai, China.

Performance Evaluation of Text Embeddings with Online Consumer Reviews in Retail Sectors, Patrick Cheong-Iao Pang, Macao Polytechnic University, Macao.

Research on Text Generation of Medical Intelligent Question and Answer Based on Bi-LSTM and Neural Network Technology,

Keyi Huang, Fenda Ji, Wei Lu and Yue Xiao, Zhuhai College of Science and Technology, China.

10:00 - 10:30 – Break

10:30 - 11:50 – Regular Session 7

Room 1 & Virtual

Chair: *Huan JinTao*

Chinese Named Entity Recognition based on BERT-CRF Model,

Shulin Hu, Huajun Zhang and Xuesong Hu, Wuhan University of Technology, China.

Using Extended Character Feature in Bi-LSTM for DGA Domain Name Detection,

Rui Pan, Jian Chen, Hanyuan Ma and Xiaoshan Bai, China Academy of Information and Communications Technology, China.

Fast Full-Wave Inversion with Quasi-Newton Method Based Speed of Sound Imaging,
Xiaoyi Jiang, Yuxin Wang and Jie Yuan, Nanjing University, China.

Chinese Named Entity Recognition based on BERTbased-BiLSTM-CRF Model,

Xuesong Hu, Huajun Zhang and Shulin Hu, Wuhan University of Technology, China.

10:30 - 11:50 – Regular Session 8

Room 2 & Virtual

Chair: *Xiao Yue*

Typhoon Track Prediction Based on TimeForce CNN-LSTM Hybrid Model,

Tongfei Li, Jiadong Lu, Meixuan Jiang, Yuchen Zhang, Rouying Wu, Yuxuan Li, Zhouya Wang and Wei Lv, Zhuhai College of Science and Technology, China.

MemInspect2: OS-Independent Memory Forensics for IoT Devices in Cybercrime Investigation

Anh-Duy Tran, Quoc-Trung Nguyen, Anh-Minh Nguyen and Minh-Triet Tran, University of Science, VNU-HCM, Vietnam.

Research on Box Office Prediction of Commercial Films Based on Internet Search Index and Multilayer Perceptron,

Te Guo, Chia Wei Chu, Junhan Gao, Mengyao Wang and Wei Lv, Zhuhai College of Science and Technology, China.

11:50 - 13:00 – Break

13:00 - 15:00 – Workshop ICS 2022-P1

Room 1 & Virtual

Chair: *Huan JinTao*

Aspect Term Extraction Based On BiLSTM-CRF Model

Jiazhao Chai, Wenqian Shang, Jianxiang Cao, School of Computer and Cyber Sciences, Communication University of China, Beijing.

Polaris for the Lost in Quantitative Investment,

Jiahong Shao, Qijia Yu, School of Computer and Cyber Sciences, Communication University of China, Beijing.

SEDCN: An improved Deep & Cross Network Recommendation Algorithm based on SENET,

Jiao Li, Nanchang Cheng, State Key Laboratory of Media Convergence and Communication, National Broadcast Media Language Resources Monitoring & Research Center, Communication University of China, Beijing.

Knowledge-Based Multi-Behavior Recommendation, Tingyu Liu, Ying Li,

Laboratory of Media Convergence and Communication Communication University of China.

Improved Protocol of Yao's Millionaires Problem,

Huiqiang Li, Zhengtao Jiang, Ting Yu, Ye Chen, School of Computer Science and Cybersecurity, Communication University of China.

Research on The Design of Music Learning Applications for preschool children Based on Tangible Interaction,

Tianqi Xie, Haiyan Li, School of Animation and Digital Arts, Communication University of China, Beijing China

13:00 - 15:00 – Workshop ICS 2022-P2

Room 2 & Virtual

Chair: *Xiao Yue*

FloTFuzzer: Response-Based Black-Box Fuzzing for IoT Devices,

Zelin Xu, Wei Huang, Wenqing Fan, State Key Laboratory of Media Convergence and Communication, Communication University of China, Beijing, China.

Principal component analysis based on different starting points,

Yuping Li, Jinnuo Zhang, School of Mathematics and Statistics, Zhengzhou Normal University, Zhengzhou, Henan.

Research on the Reform Trend of Middle School Entrance Examination System in Henan Province Based on Data Analysis, Xianhong Xu, Shanshan Tian, School of Economics and Management, Zhengzhou Normal University, Zhengzhou, China.

A concise Chinese text time relationship recognition scheme,

Hu Wenfeng, Chen Xiangwei, School of Computer Science and Cybersecurity, Communication University of China.

Key Nodes Mining in Complex Networks Based on Improved Pagerank Algorithm Kailang Zhang,

Haoban Li, School of Computer Science and Cybersecurity, Communication University of China.

15:00 - 15:30 – Break

15:30 - 17:30 – Workshop ICS 2022-P3

Room 1 & Virtual

Chair: *Huan JinTao*

A Foot Model Extraction Algorithm Based On Open3D,
Kaihui Hu, Chunfang Li, Mucong Cao
School of Computer Science and Cybersecurity, Communication University of China.

Film Analysis from the Perspective of Cinemeitrics Based on OpenCV and Deep Learning,
Jiangnan Sun, Chunfang Li, Ruihan Tang, School of Computer Science and Cybersecurity, Communication University of China.

Design and Implementation of a Textbook-Centered Smart Education Platform Featuring Film and Television,
Hongmei Shi, Chunfang Li, Yanyan Wang, School of Computer Science and Cybersecurity, Communication University of China.

Face Swapping for Film and Television Video based on FaceNet and Local Translation Warp,
Peiyan Du, Chunfang Li, Chunling Dong, School of Computer Science and Cybersecurity, Communication University of China.

A Three-Way Decision Approach Combining Probabilistic and Decision-Theoretic Rough Set, Cong Guo, Zhihang Yu, Shiyu Wu, Libo Zhang, College of Artificial Intelligence, Southwest University Chongqing, China.

15:30 - 17:30 – Workshop SMAT 2022
Chair: Xiao Yue

<https://meeting.tencent.com/dm/RuJy17y5OE5c>

Comparison between the traditional and deep learning algorithms on image matching,
Shuyao Zeng, Communication University of China.

A study of language landscape adaptation in smartphone apps,
Mengxin Zhao, Wuhan Qingchuan University.

Research on Innovation Evaluation of Scientific and Technological Achievements in Colleges and Universities in the New Era,
Jinbao Song, Yu He, Xiangyu Sun and Di Huang, Communication University of China.

Research on the Application of Virtual Human Synthesis Technology in Human-Computer Interaction,
Rui Zhen, Communication University of China, China.

Huan Zhang: A Study on the Application of Modularization Theory to Chinese Typography Design, Wuhan Qingchuan University.

Tuesday, June 28, 2022

09:00 - 11:00 – Regular Session 9
Chair: Huan JinTao

Room 1 & Virtual

A Blockchain-driven Elastic Firmware Deployment Platform for TR-069 Compatible Appliances,
Chun-Feng Liao and Leng-Hui Wang, National Chengchi University, Taiwan.

A Trigonometric Function Instruction Set Extension Method Based on RISC-V,
Zhanyuan Gao, Laiping Zhao and Haonan Chen, Soochow University, China.

Research on effects of rotating speed on grinding efficiency of ESKOM tumbling mill with consideration of lifter wear using DEM simulation,
Ziqiang Fang, Songlin Peng, Liang Zhang and Jiangang Yi, Jiangnan University, China.

A Novel Robust Color Tag for a Highly Efficient Soccer Robot Vision System,
Yan Sun and Shaorong Sun, Shanghai University, China.

Research on Text-based Q&A System Technology for Medical Aesthetic Field,
Junzhen Liu, Yixuan Zhang, Bin Gong, Wei Lu and Yue Xiao, Zhuhai College of Science and Technology, China.

Task-Level Consistency Semi-Supervised Based Domain Adaptation for Lung Nodules Segmentation,
Yifan Zeng, Aohui Pang, Wei Lv and Xiaolin Zhu, Zhuhai College of Science and Technology, China.

09:00 - 10:00 – Regular Session 1
Chair: *Xiao Yue*

Room 2 & Virtual

On the SCL Decoding of Polar Codes in Power Line Communications,
Jiange Liu, Xin Dai, Hongwu Ge, Liyuan An and Wei Zhang, State Grid Huaian Power Supply Company, State Grid Jiangsu Electric Power Co., Ltd, China.

Ship Navigation Safety Assessment Based on Neural Network,
Shuxuan Wang, Huajun Zhang and Xin Luo, Henan University, China.

Based on the analysis of interrelation between parallel distributed computer system and network,
Tingrui Yang, School of software, Heu.an University, China.

High precision detection of small hepatocellular carcinoma using improved EfficientNet with Self-Attention,
Yuxiang Wang and Zhongming Huang, Tiangong University, China.

NSGA-II-AMO: a Faster Genetic Algorithm for QWSCP,
Zehui Feng, Bei Wang, Mingjian Chen and Qi Chen, Zhejiang University, China.

Truncated projection artifacts removal in Digital breast tomosynthesis,
Enxiang Shen, Yuxin Wang and Jie Yuan, Nanjing University, China.

11:00-11:30 – Technical Forum / Closing Remarks

Room 1 & Virtual