

Yirui Wu

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PERSONAL INFORMATION

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Location: Nanjing

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Gender:Male

Personal Page:wuyirui.github.io

Birthdate:1989.03.07

EDUCATION BACKGROUND

Hohai University, Nanjing, China

College of Computer and Information

Associate Prof. 2019.07 - Present

Hohai University, Nanjing, China

College of Computer and Information

Assistant Prof. 2016.07 - 2019.6

Nanjing University, Nanjing, China

Department of Computer Science and Technology, Supervisor: Prof. Tong Lu

Ph.D. 2013.09 - 2016.06

Nanjing University, Nanjing, China

Department of Computer Science and Technology, Supervisor: Prof. Tong Lu

M.S. 2011.09 - 2013.06

Nanjing University, Nanjing, China

Department of Computer Science and Technology

B.S. 2007.09 - 2011.06

RESEARCH INTERESTS

Pattern Recognition: Pattern detection and recognition with deep learning methods.

Smart Hydrology: Hydrology big data processing with artificial intelligent methods.

Image Processing: Develop image encryption and super-resolution methods for specific usage.

RESEARCH EXPERIENCE

Key Laboratory of Water Big Data Tech. of Ministry of Water Resources 2016.07 - Present

State Key Lab for Novel Software Tech. of Nanjing University 2011.09 - 2016.9

Visgraph Group of Hong Kong University of Science and Technology 2014.8 - 2015.1

Visgraph Group of Hong Kong University of Science and Technology 2013.3 - 2013.9

ACADEMIC SERVICE

Associate Editor

Malaysian Journal of Computer Science (SCI) {2022.5.1 - 2023.5.31}

Program Chair/Conf Reviewer

ICML2022, ACM MM2022/2021, ICPR2022, CIKM2021, HPCC2022/2021, ACPR2021, ICPRAI2022, CP-SCom 2020/2021/2022, PIC2021/2020/2019, DSAA2020, ML4CS2020, SECSOC2019 ...

Journal Reviewer

IEEE Transactions on Medical Imaging (SCI)

IEEE Transactions on Human-Machine Systems (SCI)

IEEE Transactions on Industry Information (SCI)

IEEE Transactions on Industrial Electronics (SCI)

IEEE Transactions on Computational Social Systems (SCI)

IEEE Transactions on Geoscience and Remote Sensing(SCI)

IEEE Transactions on Emerging Topics in Computational Intelligence(SCI)

ACM Transactions on Internet Technology (SCI)

ACM Transactions on Multimedia Computing, Communications and Applications (SCI)

ACM Transactions on Asian and Low-Resource Language Information Processing (SCI)

Expert Systems With Applications (SCI)

Image and Vision Computing (SCI)
 Building and Environment (SCI)
 Environmental Modelling and Software (SCI)
 IET Image Processing (SCI) ...

HONORS

Dayu Scholar of Hohai University. 2017
 Best paper award in IEEE EUC 2021. 2021
 Best Demo paper award in ChinaMM 2021. 2021
 Selected as Vice President for China Computer Federation YOCSEF-Nanjing Sector. 2021
 Selected as Vice secretary for Multimedia Commission of Jiangsu Information Technology Federation. 2021
 Selected as Excellent Member for China Computer Federation-Jiangsu Province. 2021
 Keynote Speaker at The 2nd International Forum on Internet of Things and Intelligent Applications. 2022

FULL PUBLICATIONS

Journal papers

- [J01]. **Yirui Wu**, Palaiahnakote Shivakumara, Tong Lu, Chew Lim Tan, Michael Blumenstein. Contour Restoration of Text Components for Recognition in Video/Scene Images. *IEEE Transactions on Image Processing(TIP)* 25(12): 5622-5634 (2016). (**SCI**, CCF-A, IF:10.856)
- [J02]. **Yirui Wu**, Tong Lu, Zehuan Yuan, Hao Wang. FreeScup: a novel platform for assisting sculpture pose design. *IEEE Transactions on Multimedia(TMM)* 25(12): 5622-5634 (2016). (**SCI**, CCF-B, IF:6.513)
- [J03]. **Yirui Wu**, Oscar Kin-Chung Au, Chiew-Lan Tai, Tong Lu. HIRM: a handle-independent reduced model for incremental mesh editing. *Computer Aided Geometric Design (CAGD)* 35-36: 56-68 (2015). (**SCI**, CCF-B)
- [J04]. **Yirui Wu**, Haifeng Guo, Chakraborty Chakraborty, Mohammad Khosravi, Stefano Berretti and Shaohua Wan: Edge Computing Driven Low-Light Image Dynamic Enhancement for Object Detection. *IEEE Transactions on Network Science and Engineering(TNSE)* (2022).(online, **SCI**, IF:3.894)
- [J05]. Tingting Hang, Jun Feng, **Yirui Wu**, Le Yan, Yunfeng Wang: Joint extraction of entities and overlapping relations using source-target entity labeling. *Expert Systems with Applications* 177: 114853 (2021)(**SCI**, CCF-C, IF: 6.954)
- [J06]. **Yirui Wu**, Wen Zhang, Shaohua Wan: CE-Text: A Context-aware and Embedded Text Detector in Natural Scene Graph. *Pattern Recognition Letter* (2022)(Online, **SCI**, CCF-C, IF:3.756)
- [J07]. Minglei Yuan, Chunhao Cai, Tong Lu, **Yirui Wu**, Qian Xu, Shijie Zhou: A novel forget-update module for few-shot domain generalization. *Pattern Recognition* 129:108704(2022)(**SCI**, CCF-B, IF:7.740)
- [J08]. **Yirui Wu**, Pengfei Han, Zhan Zheng: Instant water body variation detection via analysis on remote sensing imagery. *Journal of Real-Time Image Processing*. 18(5): 1577-1590 (2021)(**SCI**)
- [J09]. **Yirui Wu**, Xiaozhong Ji, Wanting Ji, Yan Tian, Helen Zhou. CASR: A Context-aware Residual Network for Single Image Super-Resolution. *Neural Computing and Applications*, 32(18): 14533-14548 (2020). (**SCI**, CCF-C, IF: 5.606)
- [J10]. **Yirui Wu**, Yuntao Ma, Shaohua Wan: Multi-scale relation reasoning for multi-modal Visual Question Answering. *Signal Processing-Image Communication*. 96: 116319 (2021).(**SCI**, CCF-C, IF:3.256)
- [J11]. **Yirui Wu**, Wenxiang Liu, Shaohua Wan: Multiple attention encoded cascade R-CNN for scene text detection. *Journal of Visual Communication and Image Representation*. 80: 103261 (2021).(**SCI**, CCF-C, IF: 2.678)
- [J12]. **Yirui Wu**, Wenqin Mao, Jun Feng. AI for Online Customer Service: Intent Recognition and Slot Filling Based on Deep Learning Technology. *Mobile Networks and Applications* (2021).(**SCI**, CCF-C, IF: 3.426)
- [J13]. **Yirui Wu**, Yukai Ding, Yuelong Zhu, Jun Feng, Sifeng Wang: Complexity to Forecast Flood: Problem Definition and Spatiotemporal Attention LSTM Solution. *Complexity* 2020: 7670382:1-7670382:13 (2020)(**SCI**)
- [J14]. **Yirui Wu**, Xiao Tan, Tong Lu: A New Multiple-Distribution GAN Model to Solve Complexity in End-to-End Chromosome Karyotyping. *Complexity* 2020: 8923838:1-8923838:15 (2020)(**SCI**)

- [J15]. **Yirui Wu**, Yukai Ding, Jun Feng: SMOTE-Boost-based sparse Bayesian model for flood prediction. *EURASIP Journal on Wireless Communications and Networking* 2020(1): 78 (2020)(**SCI**)
- [J16]. Xiaofang Li, **Yirui Wu***, Wen Zhang, Ruichao Wang, Feng Hou: Deep learning methods in real-time image super-resolution: a survey. *Journal of Real-Time Image Processing*. 17(6): 1885-1909 (2020)(**SCI**)
- [J17]. **Yirui Wu**, Dabao Wei, Jun Feng: Network Attacks Detection Methods Based on Deep Learning Techniques: A Survey. *Security and Communication Networks* 2020: 8872923:1-8872923:17 (2020) (**SCI**, CCF-C)
- [J18]. **Yirui Wu**, Xuyun Zhang , Yao Xiao, Jun Feng . Attention neural network for water image classification under iot environment. *Applied Sciences* 10(3): 909 (2020).(b>SCI)
- [J19]. **Yirui Wu**, Yuechao He, Palaiahnakote Shivakumara, Ziming Li, Hongxin Guo, Tong Lu: Channel-wise attention model-based fire and rating level detection in video. *CAAI Transactions on Intelligence Technology*: 4(2): 117-121 (2019)(**SCI**)
- [J20]. **Yirui Wu**, Lianglei Wei, Yucong Duan: Deep spatiotemporal LSTM network with temporal pattern feature for 3D human action recognition. *Computational Intelligence* 35(3): 535-554 (2019) (**SCI**, CCF-C)
- [J21]. **Yirui Wu**, Zhouyu Meng, Palaiahnakote Shivakumara, Tong Lu. Compressive sensing based convolutional neural network for object detection. *Malaysian Journal of Computer Science*, 33(1):78-89 (2018)(**SCI**)
- [J22]. **Yirui Wu**, Palaiahnakote Shivakumara, Wang Wei, Tong Lu, Umapada Pal: A new ring radius transform-based thinning method for multi-oriented video characters. *International Journal on Document Analysis and Recognition*. 18(2): 137-151 (2015)(**SCI**, CCF-C)
- [J23]. **Yirui Wu**, Cao Hao, Shaohua Wan: Digital Twin of Intelligent Small Surface Defect Detection with Cyber-Manufacturing Systems. *ACM Transactions on Internet Technology*. (2022). (**SCI**, CCF-B, under review)
- [J24]. **Yirui Wu**, Lilai Zhang, Shaohua Wan: Medical Image Encryption by Content-aware DNA Computing for Secure Healthcare. *IEEE Transactions on Industry Informatics*. (2022).(b>SCI, under review)
- [J25]. **Yirui Wu**, Lilai Zhang, Shaohua Wan: RC-DNA: A Randomly and Content-aware DNA Computing Scheme for Image Encryption in IoT Secure Environment. *ACM Transactions on Multimedia Computing, Communications and Applications* (2022).(b>SCI, CCF-B, under review)
- [J26]. **Yirui Wu**, Cao Hao, Shaohua Wan: Edge-AI Driven Framework with Efficient Mobile Network Design for Facial Expression Recognition. *ACM Transactions on Embedded Computing Systems*. (2022).(b>SCI, CCF-B, under review)
- [J27]. **Yirui Wu**, Li Hao, Shaohua Wan: GDRL: An Interpretable Framework for Thoracic Pathologic Prediction. *Computer*. (2022).(b>SCI, under review)
- [J28]. **Yirui Wu**, Cao Hao, Shaohua Wan: Multi-scale Feature Enhanced Neural Network for Colon Polyp Image Segmentation with Internet of Bio-Nono Things. *IEEE Transactions on Nanotechnology*. (2022).(b>SCI, under review)
- [J29]. **Yirui Wu**, Li Hao, Lilai Zhang, Shaohua Wan: Joint Intent Detection Model for Task-oriented Human-computer Dialogue System using Asynchronous Training. *ACM Transactions on Asian and Low-Resource Language Information Processing*. (2022).(b>SCI, CCF-C, under review)
- [J30]. **Yirui Wu**, Qiran Kong, Lilai Zhang, Shaohua Wan: CDT-CAD: Context-Aware Deformable Transformers for End-to-End Chest Abnormality Detection on X-Ray Images . *IEEE-ACM Transactions on Computational Biology and Bioinformatics*. (2022).(b>SCI, CCF-B, under review)
- [J31]. **Yirui Wu**, Yansong Wang, Guangchen Shi, Jun Feng: PNN: Promotion Neural Network to Detect Mycobacterium Tuberculosis from Crowds in Sputum Images. *Multimedia Tools and Applications*. (2022).(b>SCI, CCF-C, under review)

Conference papers

- [C01]. Guangchen Shi, **Yirui Wu***, Jun Liu, Shaohua Wan, Tong Lu: Incremental Few-Shot Semantic Segmentation via Embedding Adaptive-Update and Hyper-class Representation. *ACM MM 2022*(CCF-A,under review)
- [C02]. Qiran Kong, **Yirui Wu***, Chi Yuan, Yongli Wang: CT-CAD: Context-Aware Transformers for End-to-End Chest Abnormality Detection on X-Rays. *BIBM 2021*: 1385-1388 (CCF-B)
- [C03]. Guangchen Shi, **Yirui Wu***, Shivakumara Palaiahnakote, Umapada Pal, Tong Lu: ARNet: Active-Reference Network for Few-Shot Image Semantic Segmentation. *ICME 2021*: 1-6 (CCF-B)

- [C04]. Ze-Huan Yuan, Tong Lu, **Yirui Wu**: Deep-dense Conditional Random Fields for Object Co-segmentation. IJCAI 2017: 3371-3377 (CCF-A)
- [C05]. Jun Feng, Zhongyi Wang, **Yirui Wu***, Yuqi Xi: Spatial and Temporal Aware Graph Convolutional Network for Flood Forecasting. IJCNN 2021: 1-8 (CCF-C)
- [C06]. Qiran Kong, **Yirui Wu***, Shaohua Wan: PolarText: Single-stage Scene Text Detection with Polar Representation. EUC 2021: 1-8
- [C07]. Benze Wu, **Yirui Wu***, Shaohua Wan: An Image Enhancement Method for Few-shot Classification. EUC 2021: 1-7
- [C08]. **Yirui Wu***, Pengyu Yu: User Portrait Technology Based on Stacking Mode. DASC/PiCom/CBD Com/CyberSciTech 2020: 245-250
- [C09]. Pengyu Yu, **Yirui Wu***, Benze Wu: A Novel Developer Portrait Model based on Bert-Capsule Network. HPCC/DSS/SmartCity 2020: 1225-1232
- [C10]. Pengyu Yu, **Yirui Wu***, Shun Zhao: A Novel SMOTE Algorithm based Portrait Model for Programmers. HPCC/DSS/SmartCity 2020: 1233-1240
- [C11]. Haifeng Guo, Tong Lu, **Yirui Wu**: Dynamic Low-Light Image Enhancement for Object Detection via End-to-End Training. ICPR 2020: 5611-5618 (CCF-C)
- [C12]. Yun-Tao Ma, Tong Lu, **Yirui Wu**: Multi-scale Relational Reasoning with Regional Attention for Visual Question Answering. ICPR 2020: 5642-5649 (CCF-C)
- [C13]. Xiaozhong Ji, **Yirui Wu**, Tong Lu: Context-Aware Residual Network with Promotion Gates for Single Image Super-Resolution. MMM (2) 2020: 136-147 (CCF-C)
- [C14]. Xiaoge Song, **Yirui Wu**, Wenhai Wang, Tong Lu: TK-Text: Multi-shaped Scene Text Detection via Instance Segmentation. MMM (2) 2020: 201-213 (CCF-C)
- [C15]. Yao Xiao, Minglong Xue, Tong Lu, **Yirui Wu**, Shivakumara Palaiahnakote: A Text-Context-Aware CNN Network for Multi-oriented and Multi-language Scene Text Detection. ICDAR 2019: 695-700 (CCF-C)
- [C16]. **Yirui Wu**, Yukai Ding, Jun Feng: Sparse Bayesian Flood Forecasting Model Based on SMOTE-Boost. iThings/GreenCom/CPSCoM/SmartData 2019: 279-284
- [C17]. Yukai Ding, Yuelong Zhu, **Yirui Wu**, Feng Jun, Zirun Cheng: Spatio-Temporal Attention LSTM Model for Flood Forecasting. iThings/GreenCom/CPSCoM/SmartData 2019: 458-465
- [C18]. Yisheng Yue, Palaiahnakote Shivakumara, **Yirui Wu**, Liping Zhu, Tong Lu, Umapada Pal: An Automatic System for Generating Artificial Fake Character Images. MMM (2) 2019: 291-301 (CCF-C)
- [C19]. **Yirui Wu**, Weigang Xu, Qinghan Yu, Jun Feng, Tong Lu: Hierarchical Bayesian Network Based Incremental Model for Flood Prediction. MMM (1) 2019: 556-566 (CCF-C)
- [C20]. **Yirui Wu**, Yao Xiao, Jun Feng: Hierarchically Channel-Wise Attention Model for Clean and Polluted Water Images Classification. SmartCom 2019: 83-92
- [C21]. Sauradip Nag, Palaiahnakote Shivakumara, **Yirui Wu**, Umapada Pal, Tong Lu: New COLD Feature Based Handwriting Analysis for Ethnicity/Nationality Identification. ICFHR 2018: 523-527
- [C22]. **Yirui Wu**, Yisheng Yue, Xiao Tan, Wei Wang, Tong Lu: End-To-End Chromosome Karyotyping with Data Augmentation Using GAN. ICIP 2018: 2456-2460. (CCF-C)
- [C23]. **Yirui Wu**, Weigang Xu, Jun Feng, Shivakumara Palaiahnakote, Tong Lu: Local and Global Bayesian Network based Model for Flood Prediction. ICPR 2018: 225-230. (CCF-C)
- [C24]. **Yirui Wu**, Zhaoyang Liu, Weigang Xu, Jun Feng, Shivakumara Palaiahnakote, Tong Lu: Context-Aware Attention LSTM Network for Flood Prediction. ICPR 2018: 1301-1306. (CCF-C)
- [C25]. **Yirui Wu**, Yisheng Yue, Xiao Tan, Wei Wang, Tong Lu: End-To-End Chromosome Karyotyping with Data Augmentation Using GAN. ICIP 2018: 2456-2460 (CCF-C)
- [C26]. Lianglei Wei, **Yirui Wu**, Wenhai Wang, Tong Lu: A Novel 3D Human Action Recognition Framework for Video Content Analysis. MMM (1) 2018: 42-53 (CCF-C)
- [C27]. Wenhai Wang, **Yirui Wu**, Palaiahnakote Shivakumara, Tong Lu: Cloud of Line Distribution and Random Forest Based Text Detection from Natural/Video Scene Images. MMM (2) 2018: 48-60 (CCF-C)
- [C28]. Zhaoyang Liu, **Yirui Wu**, Yukai Ding, Jun Feng, Tong Lu: Context and Temporal Aware Attention Model for Flood Prediction. PCM (1) 2018: 545-555 (CCF-C)

- [C29]. **Yirui Wu**, Zhou-Yu Meng, Shivakumara Palaiahnakote, Tong Lu: Compressing YOLO Network by Compressive Sensing. ACPR 2017: 19-24
- [C30]. **Yirui Wu**, Wenhai Wang, Shivakumara Palaiahnakote, Tong Lu: A Robust Symmetry-Based Method for Scene/Video Text Detection through Neural Network. ICDAR 2017: 1249-1254 (CCF-C)
- [C31]. Hengduo Li, Jun Liu, Guyue Zhang, Yuan Gao, **Yirui Wu**: Multi-glimpse LSTM with color-depth feature fusion for human detection. ICIP 2017: 905-909 (CCF-C)
- [C32]. Yiyang Zhou, Wenhai Wang, Wenjie Guan, **Yirui Wu**, Heng Lai, Tong Lu, Min Cai: Visual Robotic Object Grasping Through Combining RGB-D Data and 3D Meshes. MMM (1) 2017: 404-415 (CCF-C)
- [C33]. Wenhai Wang, **Yirui Wu**, Shivakumara Palaiahnakote, Tong Lu, Jun Liu: Cloud of Line Distribution for Arbitrary Text Detection in Scene/Video/License Plate Images. PCM (1) 2017: 433-443 (CCF-C)
- [C34]. **Yirui Wu**, Xianli Zhou, Tong Lu, Guo Mei, Linbi Sun: EvaToon: A novel graph matching system for evaluating cartoon drawings. ICPR 2016: 1119-1124 (CCF-C)
- [C35]. **Yirui Wu**, Tong Lu, Ze-Huan Yuan, Hao Wang: FreeScup: A novel platform for assisting sculpture pose design. ICME 2015: 1-6 (CCF-B)
- [C36]. **Yirui Wu**, Tong Lu, Jiqiang Song: A Real-Time Mesh Animation Framework Using Kinect. PCM 2013: 245-256 (CCF-C)
- [C37]. Feiming Xu, Tong Lu, **Yirui Wu**: Robust Object Tracking Using Motion Context in Crowded Scenes. PCM 2013: 550-560 (CCF-C)
- [C38]. Limin Wang, **Yirui Wu**, Tong Lu, Kang Chen: Multiclass object detection by combining local appearances and context. ACM Multimedia 2011: 1161-1164 (CCF-A)
- [C39]. Limin Wang, **Yirui Wu**, Zhiyuan Tian, Zailiang Sun, Tong Lu: A Novel Approach for Robust Surveillance Video Content Abstraction. PCM (2) 2010: 660-671 (CCF-C)