Yakun Ju

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Experience

Nanyang Technological University, Singapore 09/2023 – Present

Research Fellow at the Rapid-Rich Object Search Lab (ROSE Lab), working with Prof. Alex C. Kot

The Hong Kong Polytechnic University, Hong Kong SAR 09/2022 – 09/2023

Postdoctoral Fellow at the Dept. of Electrical and Electronic Engineering, working with Prof. Kin-Man Lam

The Hong Kong Polytechnic University, Hong Kong SAR 01/2021 – 07/2021

Research Assistant at the Dept. of Electrical and Electronic Engineering, working with Prof. Kin-Man Lam

Peking University, Beijing, China 09/2020 – 12/2020

Visiting Scholar at the Wangxuan Institute of Computer Technology, Working with Prof. Yuxin Peng

Education

Ocean University of China, Qingdao, China 09/2016 – 06/2022

Ph.D. in Computer Science, supervised by Prof. Junyu Dong

Sichuan University, Chengdu, China 09/2012 – 06/2016

Bachelor Degree of Engineering

Research Interests

3D Reconstruction, Computational Imaging, Medical Image Processing, and Underwater Vision.

Academic Service

- **Editorial Board** of Intelligent Marine Technology and Systems, 11/2023-Present
- **Editorial Board** of Metaverse, 10/2023-Present
- **Guest Editor** of Computer Vision and Image Understanding (CCF-B journal), SI: Advanced Computational Imaging and Photography Measurement, Present-09/2024
- **Guest Editor** of Photonics, SI: Advanced Photometric 3D Reconstruction and beyond, 10/2022-09/2023
- **Session Chair** of the IEEE International Conference on Multimedia and Expo (IEEE ICME), 2023

Journal

1. **Yakun Ju**, Kin-Man Lam, Wuyuan Xie, Huiyu Zhou, Junyu Dong and Boxin Shi. "Deep Learning Methods for Calibrated Photometric Stereo and Beyond", ***IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)***, 2024. (IF: 23.6)
2. **Yakun Ju**, Boxin Shi, Muwei Jian, Lin Qi and Kin-Man Lam. "Normattention-PSN: A High-Frequency Region Enhanced Photometric Stereo Network with Normalized Attention", ***International Journal of Computer Vision (IJCV)***, 2022. (IF: 19.5)
3. **Yakun Ju**, Junyu Dong and Sheng Chen. "Recovering Surface Normal and Arbitrary Images: A Dual Regression Network for Photometric Stereo", ***IEEE Transactions on Image Processing (TIP)***, 2021. (IF: 10.6)
4. **Yakun Ju**, Boxin Shi, Yang Chen, Huiyu Zhou, Junyu Dong and Kin-Man Lam. "GR-PSN: Learning to Estimate Surface Normal and Reconstruct Photometric Stereo Images", ***IEEE Transactions on Visualization and Computer Graphics (TVCG)***, 2023. (IF: 5.2)

5. **Yakun Ju**, Muwei Jian, Cong Wang, Cong Zhang, Junyu Dong and Kin-Man Lam."Estimating High-resolution Surface Normals via Low-resolution Photometric Stereo Images", ***IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)***, 2023. (IF: 8.4)
6. **Yakun Ju**, Muwei Jian, Shaoxiang Guo, Yingyu Wang, Huiyu Zhou and Junyu Dong. "Incorporating Lambertian Priors into Surface Normals Measurement", ***IEEE Transactions on Instrumentation and Measurement (TIM)***, 2021. (IF: 5.6)
7. **Yakun Ju**, Yuxin Peng, Muwei Jian, Lin Qi and Junyu Dong. "Learning Conditional Photometric Stereo with High-resolution Features", ***Computational Visual Media (CVMJ)***, 2022. (IF: 6.9)
8. **Yakun Ju**, Xinghui Dong, Yingyu Wang, Lin Qi and Junyu Dong. "A Dual-cue Network for Multispectral Photometric Stereo", ***Pattern Recognition (PR)***,2020. (IF: 8.0)
9. **Yakun Ju**, Lin Qi, Jichao He, Xinghui Dong, Feng Gao and Junyu Dong. "MPS-Net: Learning to Recover Surface Normal for Multispectral Photometric Stereo", ***Neurocomputing***,2020. (IF: 6.0)
10. Yanru Liu, **Yakun Ju***, Muwei Jian, Feng Gao, Yuan Rao, Yeqi Hu, Junyu Dong. "A Deep-shallow and Global–local Multi-feature Fusion Network for Photometric Stereo", ***Image and Vision Computing (IVC)***,2022. (IF: 4.7)
11. Kai Luo, **Yakun Ju***, Lin Qi, Kaixuan Wang, Junyu Dong. "RMAFF-PSN: A Residual Multi-Scale Attention Feature Fusion Photometric Stereo Network", ***Photonics***,2023. (IF: 2.4)
12. Yuan Rao, **Yakun Ju**, Cong Li, Eric Rigall, Jian Yang, Hao Fan, Junyu Dong. "Learning General Descriptors for Image Matching with Regression Feedback", ***IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)***,2023. (IF: 8.4)
13. Yuan Rao, **Yakun Ju**, Sen Wang, Feng Gap, Hao Fan, Junyu Dong. "Learning Enriched Feature Descriptor for Image Matching and Visual Measurement", ***IEEE Transactions on Instrumentation and Measurement (TIM)***,2023. (IF: 5.6)
14. Shaoxiang Guo, Eric Rigall, **Yakun Ju** and Junyu Dong. "3D Hand Pose Estimation from Monocular RGB with Feature Interaction Module", ***IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)***,2022. (IF: 8.4)
15. Cong Zhang, Jingran Su, **Yakun Ju**, Kin-Man Lam and Qi Wang. "3D Hand Pose Estimation from Monocular RGB with Feature Interaction Module", ***IEEE Transactions on Geoscience and Remote Sensing (TGRS)***,2023. (IF: 8.2)
16. Yuan Rao, Jian Yang, **Yakun Ju**, Cong Li, Eric Rigall, Hao Fan and Junyu Dong. "Learning General Feature Descriptor for Visual Measurement with Hierarchical View Consistency", ***IEEE Transactions on Instrumentation and Measurement (TIM)***,2022. (IF: 5.6)
17. Muwei Jian, Xiangwei Lu, Xiaoyang Yu, **Yakun Ju**, Hui Yu and Kin-Man Lam. "Flow-Edge-Net: Video Saliency Detection Based on Optical Flow and Edge-Weighted Balance Loss", ***IEEE Transactions on Computational Social Systems (TCSS)***,2023. (IF: 5.0)

♡ Conference

1. **Yakun**, Kin-Man Lam, Yang Chen, Lin Qi and Junyu Dong. "Pay Attention to Devils: A Photometric Stereo Network for Better Details", in ***International Conference on International Joint Conferences on Artificial Intelligence (IJCAI)***, 2020.
2. **Yakun**, Kin-Man Lam, Jun Xiao, Cong Zhang, Cuixin Yang and Junyu Dong. "Efficient Feature Fusion for Learning-Based Photometric Stereo", in ***IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)***, 2023.
3. **Yakun Ju**, Cong Zhang, Songsong Huang, Yuan Rao and Kin-Man Lam. "Learning Deep Photometric Stereo Network with Reflectance Priors", in ***IEEE International Conference on Multimedia and Expo (ICME)***, 2023.
4. **Yakun Ju**, Muwei Jian, Junyu Dong and Kin-Man Lam. "Learning Photometric Stereo via Manifold-based Mapping", in ***IEEE International Conference on Visual Communications and Image Processing (VCIP)***, 2020.
5. **Yakun Ju**, Muwei Jian, Cong Zhang, Yeqi Hu and Kin-Man Lam. "Deep Discrete Wavelet Transform Network for Photometric Stereo", in ***International Conference on Digital Signal Processing (DSP)***, 2023.
6. Hao Xie, Zixun Huang, Frank H.F. Leung, **Yakun Ju***, Yong-Ping Zheng and Sai Ho Ling. "A Structure-Affinity Dual Attention-based Network to Segment Spine for Scoliosis Assessment", in ***IEEE International Conference on Bioinformatics and Biomedicine (BIBM)***, 2023.
7. Hao Xie, Zixun Huang, Frank H.F. Leung, Ngai Fong Law, **Yakun Ju***, Yong-Ping Zheng and Sai Ho

Ling. " SATR: A Structure-affinity Attention-based Transformer Encoder for Spine Segmentation", in ***IEEE International Symposium on Biomedical Imaging (ISBI)***, 2024.

8. Wuyuan Xie, Kaimin Wang, **Yakun Ju** and Miaohui Wang. "pmBQA: Projection-based Blind Point Cloud Quality Assessment via Multimodal Learning", in ***ACM International Conference on Multimedia (MM)***, 2023.
9. Cong Zhang, Tianshan Liu, **Yakun Ju** and Kin-Man Lam. "Pyramid Masked Image Modeling for Transformer-Based Aerial Object Detection", in ***IEEE International Conference on Image Processing (ICIP)***, 2023.
10. Cuixin Yang, Jun Xiao, **Yakun Ju**, Guoping Qiu and Kin-Man Lam. "Improving Robustness of Single Image Super-Resolution Models with Monte Carlo Method", in ***IEEE International Conference on Image Processing (ICIP)***, 2023.
11. Cong Wang, Jinshan Pan, Wei Wang, Jiangxin Dong, Mengzhu Wang, **Yakun Ju**, Junyang Chen and Xiao-Ming Wu. "PromptRestorer: A Prompting Image Restoration Method with Degradation Perception", in ***Conference on Neural Information Processing Systems (NeurIPS)***, 2023.

♡ Invention Patent

1. **Yakun Ju**, Junyu Dong, Lin Qi, Liang Lu. ***A Single Frame Image 3D Reconstruction Device and Method Based on Deep Learning.*** Granted invention patent in China, 2017113024008.
2. **Yakun Ju**, Junyu Dong, Feng Gao. ***High-frequency Region Enhancement Photometric Stereo Method Based on Deep Learning.*** Granted invention patent in China, 202111524515.
3. **Yakun Ju**, Junyu Dong, Lin Qi. ***Multispectral Photometric Stereo Surface Normal Recovery Method Based on Deep Learning.*** Granted invention patent in China, 201910208408.

Journal Reviewer

- International Journal of Computer Vision
- ISPRS Journal of Photogrammetry and Remote Sensing
- IEEE Transactions on Visualization and Computer Graphics
- IEEE Transactions on Multimedia
- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Transactions on Industrial Electronics
- Multimedia Tools and Applications
- Knowledge-Based Systems
- Neurocomputing

Conference Program Committee or Reviewer

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2024
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2024
- IEEE International Symposium on Circuits & Systems (ISCAS), 2024

Talk

- **China3DV 2023:** Deep Learning-based Calibrated Photometric Stereo: Review & Future. *Beijing, China, 23. Apr. 2023*
- **CCF China Intelligent Robot Academic Annual Conference 2021:** Data-Driven Photometric Stereo. *Qingdao, China, 11. Dec. 2021*
- **Vision And Learning SEminar(VALSE) 2021:** Top Journal Spoltlight: 3D Vision Technology. *Hangzhou, China, 10. Oct. 2021*

Honors and Awards

- ACM Qingdao Chapter Outstanding Doctoral Dissertation Award, 2022.
- Outstanding Graduates of Shandong Province (for top 5% graduates), 2022.
- National Scholarship for Doctoral Students (for top 1% Ph.D. students), 2020.