Yakun Ju

kelvin.yakun.ju@gmail.com / yakun.ju@ntu.edu.sg · https://kelvin-ju.github.io/yakunju/

Experience

Nanyang Technological University, Singapore 09/2023 – Present

Research Fellow at the Rapid-Rich Object Search Lab (ROSE Lab), working with Prof. Alex Chichung 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 Electronic and Information 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

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

B.S. in Engineering

Research Interests

Photometric Stereo, 3D Reconstruction, Image Processing, Low-level Computer Vision, Computational Photography, and Machine Learning.

Academic Service

- **Editorial Board** of Intelligent Marine Technology and Systems, 11/2023-Present
- **Editorial Board** of Metaverse, 10/2023-Present
- **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**, 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)
2. **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)
3. **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)
4. **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)
5. **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)

6. **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)
7. **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)
8. **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)
9. 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)
10. 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)
11. 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)
12. 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)
13. 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)
14. 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)
15. 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)
16. 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. 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.
7. 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.
8. 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.
9. 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
- 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
- IEEE Access
- Knowledge-Based Systems
- Scientific Reports
- Remote Sensing
- Photonics

Con ference 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.