Yakun Ju

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Education

- **Ocean University of China - School of Computer Science and Technology** Qingdao, China
  Doctor of Philosophy in Computer Science *Sept. 2016 - Jun. 2022*
- **Sichuan University - School of Mechanical Engineering** Chengdu, China
  Bachelor of Engineering in Industrial Design *Sept. 2012 - Jun. 2016*

Experience

- **The Hong Kong Polytechnic University** Hong Kong SAR
  Postdoctoral Fellow - Department of Electronic and Information Engineering *Sept. 2022 - Present*
- **The Hong Kong Polytechnic University** Hong Kong SAR
  Research Assistant - Department of Electronic and Information Engineering *Jan. 2021 - Jul. 2021*
- **Peking University** Beijing, China
  Visiting Ph.D. Student - Wangxuan Institute of Computer Technology *Sept. 2020 - Dec. 2020*

Honors

- ACM Qingdao Outstanding Doctoral Dissertation Award - Sept. 2022
- Outstanding Graduates of Shandong Province, China - Jun. 2022
- Inspur Scholarship - Dec. 2021
- National Scholarship for Doctoral Students - Dec. 2020
- Goers Acoustic Scholarship - Dec. 2017
- Excellent Postgraduate Student of Ocean University of China - 2018, 2019, 2020, 2021

Ph.D. Dissertation

- **Yakun Ju**. *Deep Learning Models for Non-Lambertian Photometric Stereo,* Jun. 2022.

Publication

- **Yakun Ju**, Boxin Shi, Muwei Jian, *et al. NormAttention-PSN: A High-frequency Region Enhanced Photometric Stereo Network with Normalized Attention,* International Journal of Computer Vision (**IJCV**), 2022.
- **Yakun Ju**, Junyu Dong, Sheng Chen. *Recovering surface normal and arbitrary images: A dual regression network for photometric stereo,* IEEE Transactions on Image Processing (**IEEE TIP**), 2021.
- **Yakun Ju**, Kin-Man Lam, Yang Chen, *et al. Pay attention to devils: A photometric stereo network for better details,* International Conference on International Joint Conferences on Artificial Intelligence (**IJCAI 2020**).
- **Yakun Ju**, Muwei Jian, Shaoxiang Guo, *et al. Incorporating Lambertian Priors into Surface Normals Measurement,* IEEE Transactions on Instrumentation and Measurement (**IEEE TIM**), 2021.
- **Yakun Ju**, Xinghui Dong, Yingyu Wang, *et al. A Dual-cue Network for Multispectral Photometric Stereo,* Pattern Recognition (**PR**), 2020.
- **Yakun Ju**, Lin Qi, Jichao He, *et al. MPS-Net: Learning to recover surface normal for multispectral photometric stereo,* Neurocomputing, 2020.
- **Yakun Ju**, Yuxin Peng, Muwei Jian, *et al. Learning Conditional Photometric Stereo with High-resolution Features,* Computational Visual Media (**CVMJ**), 2022.
- **Yakun Ju**, Muwei Jian, Yuan Rap *et al. Deep model for high-resolution surface normals reconstruction by low-resolution photometric stereo images,* Chinese Journal of Image and Graphics (**JIG**), 2022.
- **Yakun Ju**, Lin Qi, Huiyu Zhou, *et al. Demultiplexing colored images for multispectral photometric stereo via deep neural networks,* IEEE Access, 2018.
- **Yakun Ju**, Muwei Jian, Junyu Dong, *et al. Learning photometric stereo via manifold-based mapping,* IEEE International Conference on Visual Communications and Image Processing (**IEEE VCIP 2020**).
- **Yakun Ju**, Lin Qi, Hao Fan, *et al. Photometric stereo via random sampling and tensor robust principal component analysis,* International Conference on Graphic and Image Processing (**ICGIP 2017**).
- **Yakun Ju**, Kin-Man Lam, Wuyuan Xie *et al. Deep Learning Methods for Calibrated Photometric Stereo and Beyond: A Survey,* arXiv: 2212.08414, 2022.
- Yanru Liu, **Yakun Ju (corresponding author)**, Muwei Jian, *et al. A deep-shallow and global–local multi-feature fusion network for photometric stereo,* Image and Vision Computing (**IVC**), 2022.

- Yingyu Wang, **Yakun Ju**, Muwei Jian, *et al. Self-supervised depth completion with attention-based loss,* International Workshop on Advanced Imaging Technology (**IWAIT 2020**).
- Shaoxiang Guo, Eric Rigall, **Yakun Ju**, *et al. 3D Hand Pose Estimation from Monocular RGB with Feature Interaction Module,* IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**), 2022.
- Yuan Rao, Jian Yang, **Yakun Ju**, *et al. Learning General Feature Descriptor for Visual Measurement With Hierarchical View Consistency,* IEEE Transactions on Instrumentation and Measurement (**IEEE TIM**), 2022.
- Hao Fan, Lin Qi, **Yakun Ju**, *et al. Refractive laser triangulation and photometric stereo in underwater environment,* Optical Engineering (**OE**), 2017.

Invention Patent

- **Yakun Ju**, Junyu Dong, Lin Qi, *et al. A Single Frame Image 3D Reconstruction Device and Method Based on Deep Learning,* Granted invention patent in China, 2017113024008.
- **Yakun Ju**, Junyu Dong, Feng Gao. *High-frequency Region Enhancement Photometric Stereo Method Based on Deep Learning,* Granted invention patent in China, 202111524515.
- Muwei Jian, Rui Wang, Xing Wang, **Yakun Ju**, *et al. Transform-based face image super-resolution method,* Granted invention patent in China, 2021106623438.
- Muwei Jian, Rui Wang, Xing Wang, Ji Chen, **Yakun Ju**, *et al. Low-resolution face super-resolution and recognition method based on face priori knowledge,* Granted invention patent in China, 202110510886.

Talk

- Data-Driven Photometric Stereo, **Shenzhen University**, Sept. 2022
- Data-driven Photometric Stereo, **CCF-Annual Conference on Chinese Intelligent Robots**, Dec. 2021
- Workshop5 (3D Vision)-Top Paper Spoltlight, **Vision And Learning SEminar(VALSE)**, Oct. 2021.
- Research on Data-Driven Photometric Stereo, **IJCAI-SAIA Young Elite Symposium**, Jul. 2021.

Professional Service

- **Guest Editor:** Photonics-SI:"Advanced Photometric 3D Reconstruction and beyond". https://www.mdpi.com/journal/photonics/special_issues/604639UE1N
- **Journal Reviewer:** IJCV, IEEE TIP, IEEE TIE, PR, Remote Sensing, Photonics, Scientific Report

Project

- **"Advanced AI and Image Processing Techniques for Film Restoration and Movie Analysis, Hong Kong ITC - Mei Ah joint project:** I am responsible for the detection and restoration of partial color artifacts in old movies.
- **"Underwater High-resolution Optical 3D Scanner, National Key Scientific Instrument and Equipment Development Projects of China:** I am responsible for the designing of photometric stereo systems and algorithms.
- **"underwater high-precision 3D real-time detection and analysis system, International Science and Technology Cooperation Program of China:** I am responsible for the designing of multispectral photometric stereo systems and algorithms.

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