Yakun Ju

Email: yakun.ju@polyu.edu.hk
kelvin.yakun.ju@gmail.com
Tel: (852) 93213472
(86) 13553009017
Web: kelvin-ju.github.io/yakunju

Research Fields

My research fields focus on Computer Vision, Image Processing, and Deep Learning.
Especially interests include 3D reconstruction, photometric stereo, low-level CV, and computational imaging.

Education

Ocean University of China — Qingdao, China Mainland
Ph.D. in Computer Science (successive master-doctor) — Sept. 2016 - Jun. 2022
- Thesis: "Deep Learning Models for Non-Lambertian Photometric Stereo"
- Advisor: Prof. Junyu Dong

Sichuan University — Chengdu, China Mainland
B.Eng. 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
- Advisor: Prof. Kin-Man Lam

The Hong Kong Polytechnic University — Hong Kong SAR
Research Assistant, Department of Electronic and Information Engineering — Jan. 2021 - Jul. 2021
- Advisor: Prof. Kin-Man Lam

Peking University — Beijing, China Mainland
Visiting Ph.D. Student, Wangxuan Institute of Computer Technology — Sept. 2020 - Dec. 2020
- Advisor: Prof. Yuxin Peng

Selected Publications

[1] **Y. Ju**, K.-M. Lam, W. Xie, H. Zhou, J. Dong, and B. Shi, "Deep learning methods for calibrated photometric stereo and beyond: A survey", ***arXiv preprint (Submitted to TPAMI)***, 2022.

[2] **Y. Ju**, B. Shi, M. Jian, L. Qi, J. Dong, and K.-M. Lam, "Normattention-psn: A high-frequency region enhanced photometric stereo network with normalized attention", ***International Journal of Computer Vision (IJCV)***, vol. 130, no. 12, pp. 3014–3034, 2022.

[3] **Y. Ju**, J. Dong, and S. Chen, "Recovering surface normal and arbitrary images: A dual regression network for photometric stereo", ***IEEE Transactions on Image Processing (TIP)***, vol. 30, pp. 3676–3690, 2021.

[4] **Y. Ju**, M. Jian, S. Guo, Y. Wang, H. Zhou, and J. Dong, "Incorporating lambertian priors into surface normals measurement", ***IEEE Transactions on Instrumentation and Measurement (TIM)***, vol. 70, pp. 1–13, 2021.

[5] **Y. Ju**, K.-M. Lam, Y. Chen, L. Qi, and J. Dong, "Pay attention to devils: A photometric stereo network for better details", in ***Proceedings of the International Conference on International Joint Conferences on Artificial Intelligence (IJCAI)***, 2021, pp. 694–700.

[6] **Y. Ju**, X. Dong, Y. Wang, L. Qi, and J. Dong, "A dual-cue network for multispectral photometric stereo", ***Pattern Recognition (PR)***, vol. 100, p. 107 162, 2020.

See full list of publications on scholar.google.co.uk/citations?user=hE10pMYAAAAJhl=enoi=aoJ.

Patents

1. **Yakun Ju**, Junyu Dong, Feng Gao, "High-frequency Region Enhancement Photometric Stereo Method Based on Deep Learning", *Granted invention patent in China (202111524515)*, 2022.
2. **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)*, 2021.

Projects

- Advanced AI and Image Processing Techniques for Film Restoration and Movie Analysis
  (Hong Kong ITC - Mei Ah joint project)
  Detection and restoration of partial color artifacts in old movies via low-rank methods.
- Underwater High-resolution Optical 3D Scanner
  (National Key Scientific Instrument and Equipment Development Projects of China)
  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)
  Designing of multispectral photometric stereo systems and algorithms.

Scholarships and Awards

- ACM Qingdao Outstanding Doctoral Dissertation Award — Sept. 2022
- Outstanding Graduates of Shandong Province, China — Jun. 2022
- Inspur Scholarship — Dec. 2021
- China National Scholarship for Doctoral Students — Dec. 2020
- Goers Acoustic Scholarship — Dec. 2017

Professional Service

- **Guest Editor:**
  Photonics (SCI, IF=2.536)-Special Issue:**Advanced Photometric 3D Reconstruction and beyond**
  Web: www.mdpi.com/journal/photonics/special_issues/604639UE1N
- **Academic Talk:**
  Deep learning-based 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