Zhiyuan Liang

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Education

Beijing Institute of Technology (BIT), Beijing, China — Sep. 2020 – Jun. 2023 (Expected)
Master student in Computer Technology

Hefei University of Technology (HFUT), Anhui, China — Sep. 2016 – Jun. 2020
Bachelor in Internet of Things Engineering (Ranking: 3/97)

Experience

Feng Chia University, Taiwan *(Exchange student)* — Feb. 2018 – Jul. 2018
Social Research in the U.S., Los Angeles — Jan. 2017 – Feb. 2017

Publications

Bidirectional 3D Quasi-Recurrent Neural Network for Hyperspectral Image Super-Resolution (IEEE JSTSP 2022). Ying Fu, Zhiyuan Liang, Shaodi You.

- Designed a single hyperspectral image super-resolution method, using 3D convolutions to extract spatial-spectral correlation and bidirectional quasi-recurrent units to exploit the global correlation along spectra.
- Proposed a training strategy for remote sensed images by pre-training the model on hyperspectral data and fine-tuning on remote sensed data, which solves the problem of insufficient remote sensing images.

Joint Spatial-Spectral Pattern Optimization and Hyperspectral Image Reconstruction (IEEE JSTSP 2022). Tao Zhang, Zhiyuan Liang, Ying Fu.

- Proposed a snapshot hyperspectral imaging method based on jointly optimization and reconstruction that designs the patterns in hardware and reconstruction algorithm in software together.
- The multispectral filter array, spectral sensitivity function, and spatial-spectral reconstruction algorithm are jointly learned in the proposed method.

Projects

Blind Single Hyperspectral Image Super-Resolution — Nov. 2021 – Apr. 2022

- Unsupervised learning for blind hyperspectral image super-resolution where the degradation is unknown.

SignNet | Course project of Computer Vision — Oct. 2020 – Nov. 2020

- Proposed a deep-learning framework for American sign language recognition, using an enhanced VGG network for feature extraction and average background subtraction algorithm for background removal.
- Achieved real-time recognition on a single CPU with 85% accuracy.

Skills

- Programming Languages: C++, Python, Pytorch, Matlab, Java
- Course: Advanced Mathematics (93), Complex Variables (97), Probability and Statistic (98), Computer Graphics (94), Computer Vision (93), Big Data (95), JAVA (100)
- Interests: Low-level Computer Vision, Computational Imaging

Honors and Awards

China National Scholarship, Ministry of Education — 2021
Provincial Outstanding College Students, Anhui — 2019
4th Prize in National Chess Association Masters Tournament — 2018
2nd Prize in National Chess Association Masters Tournament. Award on National Chess Master — 2016