Ren Zhihao

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Education

Shandong University Sept.2022 – present
Electrical Engineering Master Jinan, Shandong

- Degree Dissertation Title: Transmission Line Hidden Danger Detection Based on Multi-sensor Fusion

Shandong University of Science and Technology Sept.2018 – Jun.2022
Electrical engineering and its automation Bachelor Qingdao, Shandong

- GPA: 85.99/100
- Degree Dissertation Title: Design of clear processing algorithm for dust and fog images

Academic achievements

- Ren Z, Su Y. Self-supervised video distortion correction algorithm based on iterative optimization[J]. Pattern Recognition, 2024, 148:110114. [paper]
- Ren Zhihao, Su Ya. Semantic Graph Matching for Image and Large-scale Point Cloud Registration[J]. IEEE Transactions on Image Processing. (Under Review)
- ZHAO Meng, REN Zhihao, CHU Haifeng, etc. Dust and fog image-sharpening algorithm based on atmospheric scattering model in coal face[J]. Journal of China Coal Society, 2023, 48(08):3312-3322.

Project Experience

On-line Lidar-Camera fusion system for power towers Dec.2022 – present
My tasks: State Grid Shandong Provincial Information and Communication Company

- Tower/drone mounted monocular camera distortion correction, RGB image pre-processing
- The joint calibration of lidar-Camera mainly solves the problem of cross-modal data fusion between large-scale point clouds in the field and uncalibrated cameras
- Transmission line hidden danger detection, after obtaining the deeply integrated image, calculate the three-dimensional clearance distance between the hidden danger target and the transmission line, and determine the hidden danger level

Digital twin system for substation switchgear Jul.2023 – Nov.2023
My tasks: -

- Online image enhancement in complex scenes
- Online meter readings based on OCR technology as well as switching status recognition
- Multi-source heterogeneous data analysis based on LSTM network

Multi-view pedestrian trajectory reconstruction and analysis of the exhibition center Jan.2023 – Jun.2023
My tasks: -

- R&D of distributed time-synchronized camera module
- Multi-view fixed camera 3D scene reconstruction
- Multi-view pedestrian ReID and multi-target real-time trajectory reconstruction

Expertise

- Programming Language: Python $\gg$ C = CPP
- Algorithms: LSTM, Convolutional Neural Networks (CNNs), Graph Convolutional Neural Networks (GCNs)
- I have some knowledge of algorithms such as multi-source heterogeneous data fusion and analysis

Awards

The FIRST PRIZE of the National College Student ROBOMASTER Robot Competition	Aug.2020
Bronze Award in the 2023 Jinan Regional Finals of the Ascend AI Innovation Competition	Dec.2023
First prize in Shandong University Student Robot Competition	Oct.2020
Shandong University 2022 Second-class Academic Scholarship for Master's Students	Oct.2022
I have won more than 10 provincial and above awards in various discipline competitions	-

Others

- Language: English - familiar(CET-6 522), Chinese
- Hobby: Electronic modules DIY; Design and development of small embedded devices; Badminton
- Personal evaluation: Self-driven; Main line and branch line parallel; Strong ability to work under pressure