Jinhao Shen

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RESEARCH INTEREST

Large Language Models; Multimodal; AIGC; Computer Vision

EDUCATION

Northwestern Polytechnical University - **Computer Science and Technology** - **Master** Sep 2022 - Present

Northwestern Polytechnical University - **Automation** - **Bachelor** Sep 2018 - Jun 2022

- **Academic Performance:** GPA: 3.73/4.0

PUBLICATIONS

J. Shen, C. Zhang, Y. Yuan and Q. Wang, "Enhancing Prospective Consistency for Semisupervised Object Detection in Remote-Sensing Images," in *IEEE Transactions on Geoscience and Remote Sensing,* vol. 61, Art no. 5619312, pp. 1-12, 2023. (JCR Q1, IF: 8.2, first author)

- Propose a novel semi-supervised object detection algorithm, namely Prospective Consistency Teacher (PCT)
- Focus on the issues of densely arranged instances and large variations in object scale
- Reduce the inconsistency between the pseudo labels and predictions during training

J. Shen, C. Zhang, M. Zhang, Q. Li and Q. Wang, "Learning Remote Sensing Aleatoric Uncertainty for Semisupervised Change Detection," in *IEEE Transactions on Geoscience and Remote Sensing,* vol. 62, Art no. 5635413, pp. 1-13, 2024(JCR Q1, IF: 7.5, first author)

- Introduce the Progressive Uncertainty-aware and -guided Framework (PUF)
- Define the remote sensing aleatoric uncertainty for change detection
- Enrich the data uncertainty of the LEVIR dataset by annotating hundreds of image pairs

PROJECTS

Remote Sensing Change Detection Algorithm Sep 2023 - Mar 2024

- Conduct research on change detection algorithms for remote sensing imagery, utilizing bitemporal optical images to generate pixel-level semantic change maps, with the aim of improving algorithmic accuracy and generalization
- Process multimodal images with separately designed decoders to model modality-specific data

Real-time Image Processing System Sep 2022 - May 2023

- Implement an object detection workflow based on the object detection framework, which includes image preprocessing, image extraction, feature fusion, and performance evaluation
- Design a video stream handler to detect objects and store key frames simultaneously

AWARDS

"Master's National Scholarship"-2023
"Outstanding Graduate Student" and "First Class Academic Scholarship"-2023
"Excellent Student" and "First Class Scholarship"-2019, 2020
"Honor First Class Scholarship"-2019

SKILLS

- Join the UBCO summer camp for a month in 2019; Hold CET 4/6； IELTS 6.5
- Proficient in Python programming language and PyTorch deep learning framework