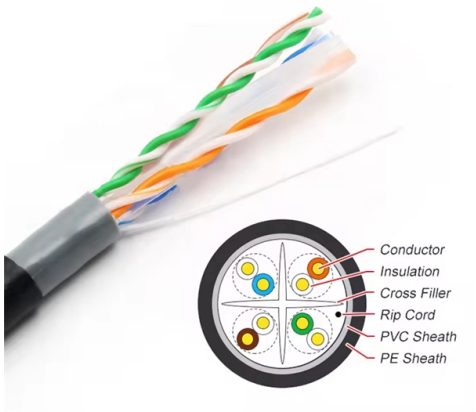
Low-loss optoelectronic fusion for surveillance in Pakistan



Overview

This study proposes a novel hierarchical visible-infrared fusion framework that integrates feature-level fusion with an Environment-Aware Dynamic Weighting (EADW) mechanism and decision-level fusion with D-S evidence theory for uncertainty management. Multi-modal fusion is imperative to the implementation of reliable object detection and tracking in complex environments. The proposed framework demonstrates. This research paper aims to conduct a comparative analysis of several state-of-the-art, deep learning based image fusion models for low light surveillance applications. Additionally, our paper will investigate the merits and challenges corresponding to each method in the context of low light image. It includes code for methods like DIDFuse, SwinFuse, Dual-Branch Network, and DenseFuse, along with their results on the LLVIP dataset.

Article Content

Radar-optical fusion detection of UAV based on improved YOLOv7-tiny

Radar and camera technologies are integrated to improve the detection capabilities of the platforms. The proposed method involves generating regions of interest (ROI) by projecting radar

RMF-ED: Real-Time Multimodal Fusion for Enhanced Target

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Accurate target detection in low-light environments is crucial for unmanned aerial vehicles (UAVs) and autonomous driving applications. In this study, the authors introduce a real-time

Improving Object Detection in Low Light Surveillance Using Hybrid

A new innovative image fusion framework gets presented within this research because it unites multi-exposure image fusion with guided filtering alongside deep learning-based denoising features to

Advances in UAV detection: integrating multi-sensor systems and AI

Sensor fusion enables UAV detection under a wide range of environmental conditions, such as low visibility due to night, fog, or cluttered backgrounds. By leveraging the unique strengths of

Improved target detection method for space-based optoelectronic

To improve space object detection and help prevent collisions with critical facilities such as satellites, this study proposes an improved method for the detection of faint and small space-based...

Radar and Camera Fusion for Object Detection and Tracking: A ...

Nonetheless, there still lacks a systematic survey specifically focusing on deep fusion of radar and camera for object detection and tracking. To fill this void, we embark on an endeavor to

Research on Multi-Modal Fusion Detection Method for

Experimental results demonstrate that the proposed method achieves a detection accuracy of 93.5% for LSS-UAV clusters in complex urban

Evaluating Image Fusion Techniques for Improved Low Light

This research paper aims to conduct a comparative analysis of several state-of-the-art, deep learning based image fusion models for low light surveillance applications.

Embedded real-time infrared and visible image fusion for UAV ...

In this paper, we propose an infrared and visible light image fusion method and implement it on two platforms with commonly used HW accelerators for embedded vision

Evaluating Image Fusion Techniques for Low Light

This repository contains the code and results for the paper "Evaluating Image Fusion Techniques for Improved Low Light Surveillance" published in the International

Infrared and visible image fusion using latent low rank

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Image fusion aims at the integration of different complementary image data into a distinct, new image with the best achievable quality. Fusion of

Multi-Feature Fusion-Guided Low-Visibility Image Enhancement for ...

In this paper, we propose a multiple-feature fusion-guided low-visibility enhancement network (MFF-Net) for real-time maritime surveillance, which extracts global and local features simultaneously ...

Embedded real-time infrared and visible image fusion for UAV ...

Infrared and visible image fusion is a beneficial processing task for Unmanned Aerial Vehicle (UAV) surveillance, which can improve visibility by combining the advantages of the infrared

Evaluating Image Fusion Techniques for Improved Low Light Surveillance

But in low light conditions, visible images are susceptible to reduced visibility and noise , limiting their usefulness in image fusion. Thus by utilising both visible and infrared images, we can compensate

Spatio-Temporal Fusion Based Low-Loss Video Compression

To this end, we propose a lightweight spatiotemporal fusion based low-loss video compression algo-rithm, which consists of two parts: feature clustering-based temporal sampling and dynamic encoding

Advances in UAV detection: integrating multi-sensor systems and AI

In , the authors presented a sensor fusion strategy for non-cooperative detection and avoidance (SAA) for UAVs flying at low altitudes. This strategy integrates radar and optical-electronic

Towards Low-Visibility Enhancement in Maritime Video Surveillance:

A multiple-feature fusion-guided low-visibility enhancement network (MFF-Net) for real-time maritime surveillance, which extracts global and local features simultaneously to guide the reconstruction of

(PDF) Low-altitude protection technology of anti-UAVs

Low-altitude protection technology of anti-UAVs based on multisource detection information fusion October 2020 International Journal of Advanced

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