Special Issue

RGB-IR Vision for 3D Scene Analysis and Thermal Assessment

Message from the Guest Editor

The fusion of RGB and IR imaging is advancing 3D scene analysis, particularly in thermal diagnostics and energy efficiency. This Special Issue invites contributions at the intersection of multispectral vision, 3D reconstruction, and thermal analysis, focusing on calibration, registration, and interpretation of data from RGB and LWIR cameras. We especially welcome papers on low-cost, mobile imaging systems (e.g., Raspberry Pi-based) for building and infrastructure analysis, such as heat loss detection, thermal bridge identification, defect localization, and data-driven residential energy efficiency estimation. Topics of interest include (but are not limited to): RGB-IR camera calibration for multispectral 3D acquisition; Stereo/depth estimation using visible and thermal data; Thermal-emissive feature detection and segmentation; LWIR sensor radiometric alignment/calibration; Low-cost embedded systems for thermal monitoring; ML methods for RGB/IR image fusion/interpretation; Applications in energy loss estimation/building diagnostics; Mobile vision for real-time environmental monitoring; Data collection protocols/benchmark datasets for RGB-IR fusion.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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