Infrared Image Enhancement Using Contrast Limited Adaptive Histogram Equalization and Denoising Convolution Neural Network

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Abstract:
Digital Image processing is an evolving area of research over decades. Several techniques, algorithms, technologies, and trends are still being developed in this area. Detecting an object in day vision and when the background is stable is quite simple. When focusing on night vision object detection, thermal images have to be processed and when the background is not stable object detection or identification is a bit challenging. Deep image learning is more trending process to overcome complex issues to make machine vision analogous to human vision. A dynamic image has a lot of blur and noise whereas image preprocessing eases the complexity. Contrast Limited Adaptive Histogram Equalization (CLAHE) when applied on an infrared image is further enhanced with Denoising Convolution neural network (DCNN) on approach for improving contrast.

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