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Depth Estimation in DNN Using Stereo Thermal Image Pairs

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Abstract : Depth estimation using stereo images is a challenging problem in computer vision. Many different studies have been carried out to solve this problem. With advancing machine learning, tackling this problem is often done with neural network-based solutions. The images used in these studies are mostly in the visible spectrum. However, the need to use the Infrared (IR) spectrum for depth estimation has emerged because it gives better results than visible spectra in some conditions. At this point, we recommend using thermal-thermal (IR) image pairs for depth estimation. In this study, we used two well-known networks (PSMNet, FADNet) with minor modifications to demonstrate the viability of this idea.

Keywords : thermal stereo matching,deep neural networks,CNN,Depth estimation
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