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MEDICAL IMAGE PROCESSING BASED ON DEEP LEARNING

Abstract

In order to pay attention to the physical condition of astronauts in space during long-term space stay and lunar and Mars missions, this paper proposes a non-unimodal feature decomposition and image fusion technology, which can achieve the purpose of medical image enhancement by analyzing and merging several modes of medical images, so as to facilitate further research such as disease identification. The purpose of multimodal image fusion is to combine the characteristics of each modal image, such as highlighted areas and texture details with physical meaning. In order to effectively model cross-modes and decompose the expected common and unique features of each mode, this paper first uses a high-resolution image recovery module to extract cross-mode shallow features, and then introduces a two-branch feature extractor, one of which uses long-range attention to process low-frequency global features, and the information contained in the low-frequency part of each mode is related. The other branch is used to extract high-frequency local features, while the high-frequency portion of each mode is uncorrelated. The image is fully fused by multi-scale feature fusion technology. The experiment shows the effectiveness of the medical image fusion mission, which can realize the purpose of monitoring the physical condition of astronauts.