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(57) Abstract :
A method for segmenting suspicious hot spot regions in a plurality of joints is disclosed. The method includes training an encoder decoder knee inflammation model (a Knee Inflammation Segmentation Network (fKNEE)) through source data having a plurality of knee IR images, a ground truth associated with the plurality of knee IR images to generate a plurality of optimized parameters. The method includes training a new target network based on the plurality of optimized parameters, and a Hot spot Attention Module (HAM) using target data having a plurality of hand IR images and a ground truth associated with each hand IR image amongst the plurality of hand IR images. The method includes producing a first feature map associated with the source data and a second feature map associated the target data based on the source data and the target data. The method includes processing, by a Hot spot Attention Module (HAM) in the new target network, the first feature map and the second feature map to highlight the suspicious hot spot regions from the source data and the target data. The method includes performing an entropy-based KL divergence, to reduce a domain shift between the source data and the target data to reduce a presence of the suspicious hot spots in the source data and the target data. The method includes extracting, by a Domain-Adapted Guided Hot spot Segmentation Network (DAHS-Net), the suspicious hot spot regions segmented from the source data and the target data. {To be published with figure 4}

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