# DEEP LEARNING-BASED VITILIGO RECOGNITION SYSTEM FOR DERMOSCOPIC IMAGES

## ABSTRACT

This invention relates to the field of medical information technology, and particularly to a deep learning-based vitiligo recognition system for dermoscopic images. The system comprises a skin dual-channel image partitioning module, a white-spot lesion segmentation module, a segmentation map authenticity binary screening module, and a skin vitiligo recognition module. It acquires dermoscopic image sets and performs light interference elimination and dual-channel image partitioning, thereby obtaining corresponding dermoscopic image subsets under RGB and polarised-light channels. A dual-path U-Net architecture is adopted as the backbone network, with a cross-channel attention mechanism introduced to segment skin white-spot lesions, generating a sequence of lesion segmentation maps. Based on the sequence, binary vitiligo region optimisation is performed, and a corresponding vitiligo medical knowledge graph is constructed for recognition analysis, thereby producing the vitiligo lesion recognition result for the current dermoscopic image. The invention improves the recognition efficiency of vitiligo lesion regions.

FIG. 1