Special Issue

Advances in Skin Lesion Image Analysis Using Machine Learning Approaches

Message from the Guest Editors

Dermatologists diagnose skin lesions from dermoscopic or clinical images by visual inspection. To support the diagnostic process that might be slowed by an increasing workload as well as a lack of specialist in certain areas of the world, methods for computer-aided detection and computer-aided diagnosis for skin lesion image analysis have been developed. Among them, advanced machine learning and especially deep learning (DL) approaches have reached dermatologist-level classification of skin lesions from dermoscopic and non-dermoscopic images and generated considerable expectations in this area. Suitable cloud-based or offline computational resources, and large publicly available databases for skin lesion images have further enhanced the development of dermatological applications of DL-based technologies for image analysis. Before their effective use in clinical settings, however, several issues remain to be addressed, such as quality standards of images, generation of unbiased image data sets, generalizability of models, applicability of algorithms in a real-world settings or transparency of the decision process of DL algorithms, to name some.

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