Related Work(formatted)

There are just a few automated skin lesion classification systems on the market, with the majority of them being PC-based and requiring additional accessories and/or regulated circumstances to acquire data.

The Automated Melanoma Recognition system created by H. Ganster et al. [4] is an example of an integrated system. A fusion of the outputs of three algorithms was used to achieve automated picture segmentation, which resulted in 96% correctly segmented images. When classifying into three classes, a 24-NN classifier achieved 73 percent melanoma recognition, and 87 percent sensitivity and 92 percent specificity for the “not benign” class in a two-class situation.

A system developed by F. Ercal et al. [5] that used dermatologist-defined lesion boundaries and a commercial Neural Network classifier with calculated features representing lesion shape irregularity and asymmetry, as well as relative colours, to develop a system. This technique was successful in classifying 80% of the time. Neither of the aforementioned solutions were designed for use by the general public or implemented on mobile devices.

MoleSense [6] is a PC programme developed by Opticom Data Research (Canada) that collects photos of skin lesions, analyses them using ABCD rules, and extracts feature values, but does not classify them.

The Handyscope, created by the German business Fotofinder, combines a dermatoscope and an iPhone [8] to extract lesion details. This does not include the classification of lesions on the same device. A dermatoscope and a digital camera were combined with a PC programme that calculates a mole risk score in the Dynamole system [7].

Our system integrates image segmentation, feature extraction, and classification into a single application that is deployable on an Android mobile computing platform. All the required processing is done on the mobile device. The results are presented to the user within seconds without the need to interact with any external service or device