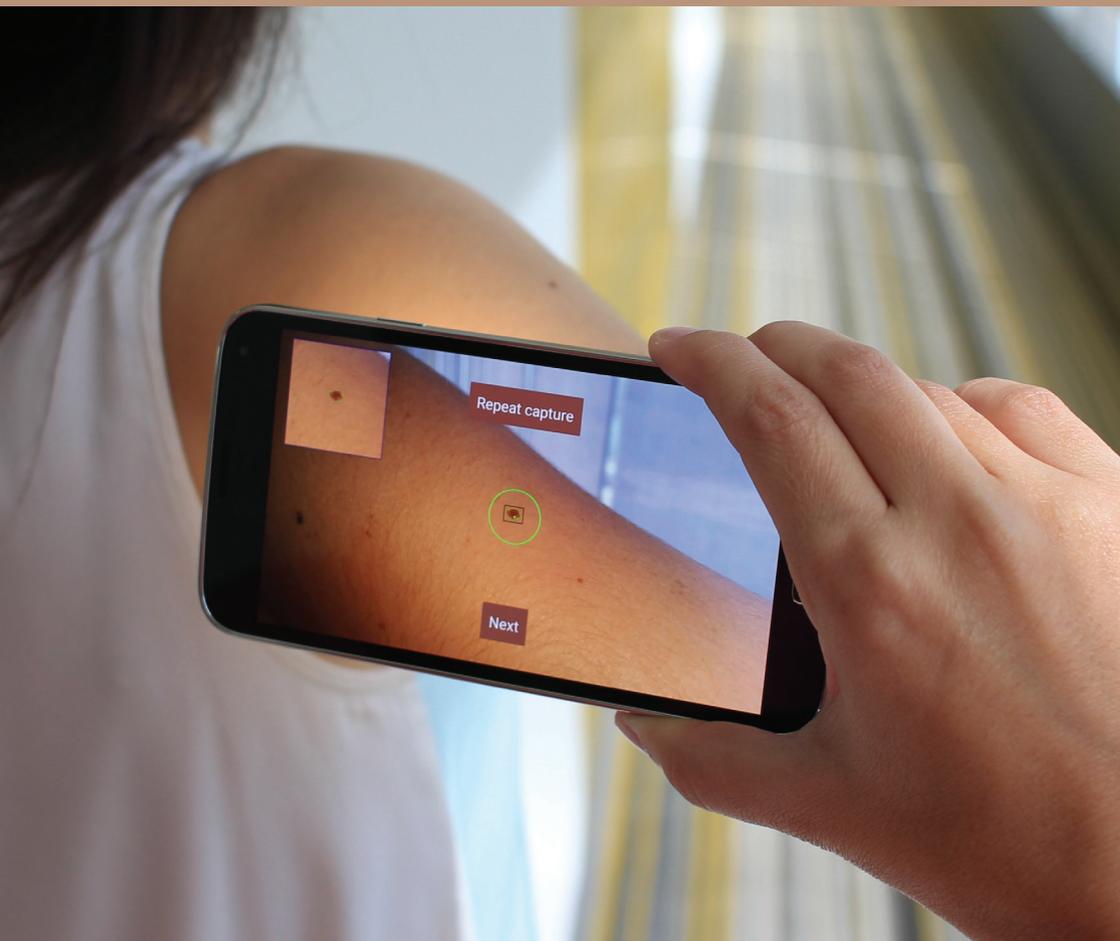
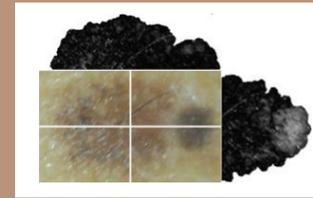


DECENTRALISED SCREENING IN DERMATOLOGY

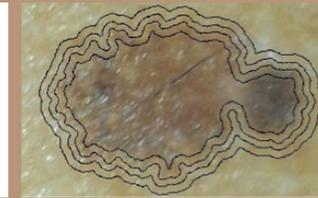
# DERMA



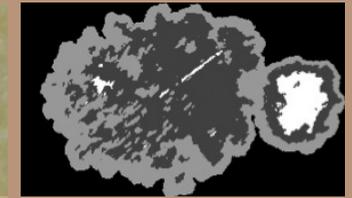
# MOBILE TECHNOLOGY FOR HEALTHCARE PROFESSIONALS, VALIDATED AS MONITORING OR REFERRAL SOLUTION FOR SKIN LESIONS



Asymmetry



Border



Colour



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## Motivation

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One in every three cancers diagnosed worldwide is a skin cancer, and nearly three million new cases of skin cancer are detected annually. Smartphones are well suited to maximize the accessibility of solutions for early detection of pathologies, particularly in dermatology where image acquisition plays such a crucial role.

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## Solution

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FhP-AICOS has been performing research in Mobile Dermatology since 2011, developing a solution to improve the referral process for skin lesions between Local Health Centres (LHC) and Hospital Dermatology Departments (HDD).

With our solution, general practitioners from LHC are able to acquire relevant dermatological data with a mobile application, in an easy and intuitive way. One of the main differentiation factors of our solution is the automatic image acquisition software, that autonomously controls the image quality through the real-time computation of relevant

focus metrics and control of camera parameters, and also segments the skin mole in real-time for further analysis.

This solution also aims to assist the dermatologists from HDD in the prioritization of cases, through a decision support system that automatically performs risk assessment of mobile-acquired skin lesion images. A machine learning algorithm was developed based on image processing that processes and extracts significant features based on the ABCD rule of dermatoscopy. It was developed using a dataset of nearly 430 pigmented skin lesions, independently annotated by five dermatologists.

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## Benefit

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Our solution improves the efficiency of the referral process by: i) facilitating the acquisition of relevant dermatological data by non-specialists; ii) ensuring image quality; and iii) providing a decision support system for cases prioritization to help dermatologists. Besides this, our technology is also being developed to be used in other types of skin lesions such as skin ulcers.



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