

INTRODUCTION :

Most people in rural and semi-urban areas afflicted with ocular diseases were diagnosed late due to a lack of ophthalmologists and costly immobile equipment. Digital ocular screening exists yet is not widely available, especially outside urban areas. Mobile applications are the current niche in healthcare, even for screening or analysing non-communicable ocular diseases (NCODs). Many industries are actively adopting mobile phone technology, and the healthcare industry is no exception. This technology is a promising platform that can offer cost-effective solutions as the combination of smartphones and cloud computing facilitates a scalable solution. To make the best of the situation, the Internet of Things (IoT) has shown potency, representing an ideal solution to the limited medical attention received by people in developing countries. IoT allows health practitioners and clinicians to conduct patient monitoring and diagnosis remotely and regularly. An integrated decision support system (DSS) using a collaborative cloud and machine intelligence approach may advance the prediction of NCODs, which inadvertently gives health practitioners and clinicians an efficient and prompt system that allows them a second opinion on a diagnosis.

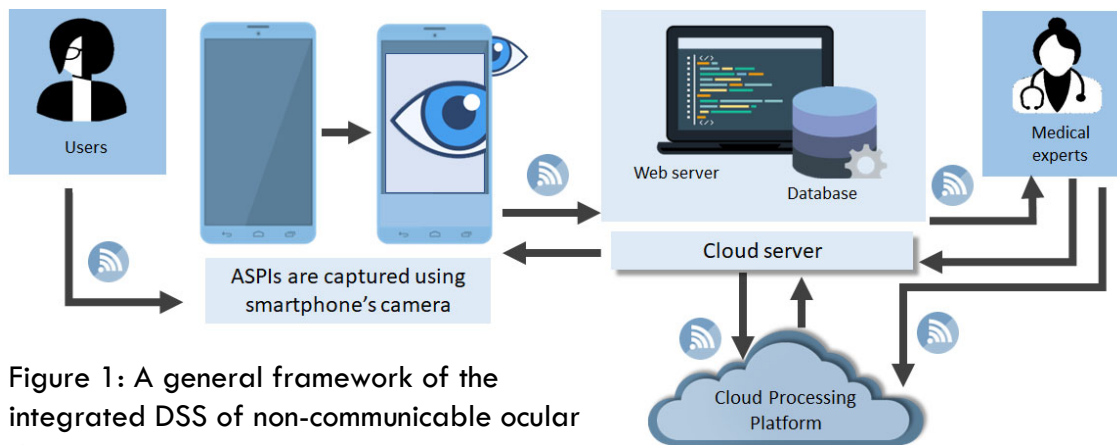


Figure 1: A general framework of the integrated DSS of non-communicable ocular diseases using ASPIs.

The primary target of this project is to develop an integrated cloud-based DSS for NCODs to detect anterior segment ocular diseases such as cataracts, glaucoma, pterygium, etc., using machine intelligence, cloud technology and an integrated system approach. The anterior segment photographed images (ASPIs) captured using a smartphone camera are then saved in cloud storage. The anterior segment corneal images are processed in the cloud processing platform, with the captured images, and their detection results can be accessed and validated by experts before sending a notification to users.

PROJECT MEMBERS :

