

DETERMINATION OF BLOOD GROUP USING FINGERPRINT

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Determining blood type is essential including in emergency situation. Currently, these tests are performed manually by technicians, which can lead to human errors. Various systems have been developed to automate these tests, but none is able to perform the analysis in time for emergency situations. The project aims to address the need for efficient and accurate blood typing methods in healthcare settings. The project utilizes pre-acquired fingerprint images obtained through sensors. These images serve as inputs for the proposed system. Initially, the images undergo preprocessing to enhance quality and remove noise, ensuring optimal analysis. Feature extraction methods are then applied to discern distinctive patterns associated with different blood groups from the fingerprint images. Subsequently, machine learning algorithms such as support vector machines (SVM) and Convolution Neural Networks (CNN) are trained on a dataset comprising labelled fingerprint images and corresponding blood groups. The proposed system offers several advantages over manual blood typing methods, including speed, objectivity, and scalability. Moreover, its non-invasive nature reduces the risk of contamination and ensures patient safety. This main project contributes to advancing healthcare technologies, with potential applications in blood transfusion services, clinical laboratories, and emergency medical care.