G. Narayanamma Institute of Technology & Science (For Women) (Autonomous)

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Shaikpet, Hyderabad-500104

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
GNR- 22, (2024- 2025) III B. Tech Mini Project-2

on "Fingerprint Analysis for Blood Grouping"
Under the guidance of
Mr. B.Vamshi , Assistant Professor

Abstract :

Detection of blood group using fingerprints is an innovative approach aimed at simplifying and accelerating blood group identification. Traditional blood group detection methods typically involve biochemical analysis of blood samples, which can be time-consuming, require specialized equipment, and carry the risk of contamination or infection. Fingerprint-based blood group detection leverages the unique biological markers and patterns associated with different blood groups, which can be analyzed through machine learning algorithms.

This approach has the potential to improve accessibility in resource-limited settings, reduce procedural costs, and increase safety by eliminating the need for invasive sample collection. This model extracts fingerprint features and applies a trained machine learning model to predict the blood group accurately. The proposed method, if successfully developed, could provide a non-invasive, cost-effective, and quick alternative for blood group identification, making it suitable for large-scale screening and use in emergency healthcare applications. Future work could expand this method to enhance accuracy across diverse populations, integrate it into portable healthcare devices, and develop real-time, non-invasive blood typing solutions for emergency and remote healthcare needs.

S/W Requirements

OpenCV, scikit-image, NumPy, Pandas, MATLAB, TensorFlow, PyTorch, Scikit-Learn, Convolutional Neural Networks (CNNs),Flask

H/W Requirements
Processing Unit, RAM(16GB or High), Storage(above 256GB), GPU.

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