



ABESEC Ghaziabad
Department of Computer Science & Engineering

SYNOPSIS REPORT
(Session 2024-25)

Project Title: ABO Blood Group Detection through Image Processing Technique.				
Project Type: Web based Application				
	Name	Roll Number	Section	Signature
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Signature:				
Date of submission				

Contents of Synopsis Report:

1.1. Problem Introduction

1.1.1. Motivation

Accurate blood group determination is critical for safe blood transfusions and organ transplants. Traditional serological methods are labor-intensive, require specialized equipment, and can be time-consuming. The motivation behind this project is to develop an automated, efficient, and user-friendly image processing technique for ABO blood group detection, thereby enhancing the accuracy and speed of the testing process.

1.1.2. Project Objective

The primary objective of this project is to design an automated system that utilizes image processing algorithms to accurately detect ABO blood groups from blood smear images. The expected outcomes include:

- A robust classification model that achieves accuracy.
- A reduction in the time required for blood group determination.
- A user-friendly interface that can be used by non-specialists.

1.1.3. Scope of the Project

This project has potential applications in various areas, including:

- Clinical laboratories for blood typing.
- Emergency medical services for rapid blood group identification.
- Forensic science for victim identification.
- Blood banks for efficient donor matching.

1.2. Related Previous Work

International Journal of Scientific & Engineering Research Volume 9, Issue 3, March-2018
ISSN 2229-5518

Link: https://drive.google.com/file/d/11eLr_msnXr52nqLYvdMm3aPyHm7DmaSR/view?usp=sharing

Dannana, S., & Prasad, D. Y. V. (2022). Blood group detection using ML classifier. *International Journal of Health Sciences*, 6(S1), 4395–4408. <https://doi.org/10.53730/ijhs.v6nS1.5830>.

Link: <https://drive.google.com/file/d/1o1Tmk4znliPL8wt7Gx0pAA1mGZ8SnAg/view?usp=sharing>

Innov Biosyst Bioeng, 2024, vol. 8, no. 2, 53–68
doi: 10.20535/ibb.2024.8.2.298201

Link: <https://drive.google.com/file/d/1PVNsoATTAbrQUAvVapvjJIPMghxwLNls/view?usp=sharing>

1.3 Software and Hardware requirements

Front-End Technologies Used:

- HTML
- CSS
- Javascript
- UI/UX
- MATLAB

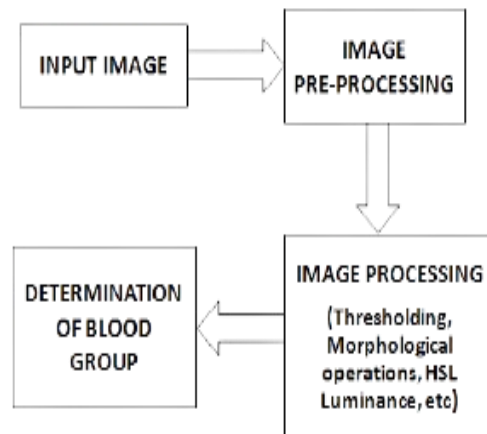
Back-End Technologies Used:

- Javascript
- Python
- MATLAB

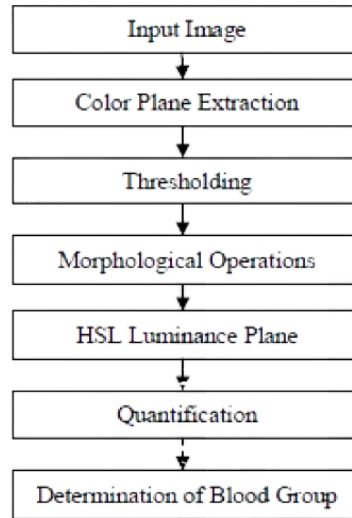
Machine Learning Technologies Used:

- Image Learning Techniques
- Mathematical Expressions for Quantification

1.4 Proposed Method



1.5 Methodology



1.6 References

For this project, we are primarily relying on digital sources such as YouTube videos and blog posts to gather information and insights. These platforms offer a wealth of accessible content, including tutorials, expert discussions, and practical demonstrations related to blood typing and image processing techniques. YouTube videos provide visual explanations and step-by-step guides that enhance our understanding of the methodologies involved, while blogs offer detailed analyses and summaries of recent advancements in the field. By leveraging these digital resources, we aim to build a comprehensive foundation for our project, ensuring that we are informed by both theoretical knowledge and practical applications.

For Instance, we started with the following videos:

Blood Grouping Detection Using Image Processing | IEEE Machine Learning Projects

<https://youtu.be/-aWnxbnVOw?feature=shared>

Blood Group Detection Using Image Processing and Deeplearning | IEEE Machine Learning Projects:

<https://youtu.be/G7IDbYMfING?feature=shared>