

Project Design Phase Solution Architecture

Date	24 June 2025
Team ID	LTVIP2025TMID35409
Project Name	HematoVision: Advanced Blood Cell Classification Using Transfer Learning
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- **Find the best tech solution to solve existing medical challenges**

HematoVision leverages MobileNetV2 with a Flask interface to automate blood cell classification and reduce manual errors.

- **Describe the structure, characteristics, behavior, and other aspects of the system**

The system includes modules for image upload, preprocessing, prediction, and result display tailored for clinical workflows.

- **Define features, development phases, and solution requirements**

Key features include real-time prediction, user interface, and report generation, developed in stages from model training to deployment.

- **Provide specifications for how the solution is defined, managed, and delivered**

The model accepts images, resizes to 244×244, classifies into four types, and returns results through a web interface with storage support

Example - Solution Architecture Diagram:

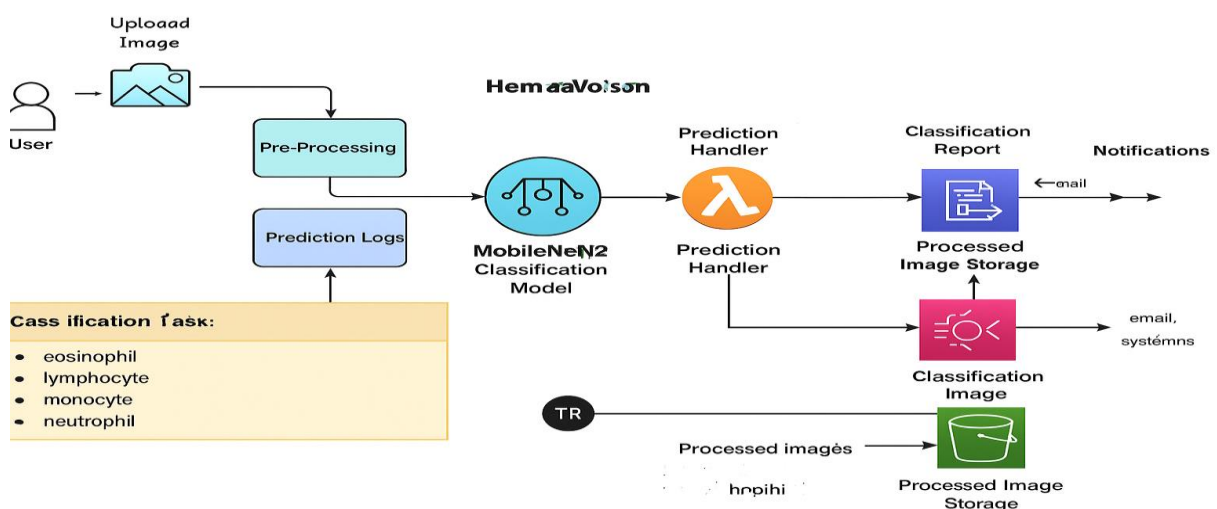


Figure 1: Architecture and data flow of the HemetoVision: Advanced BloodCell Classification Using transfer Learning