

Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	27 January 2026
Team ID	LTVIP2026TMIDS55747
Project Name	Hematovision: Advanced Blood Cell Classification Using Transfer Learning
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Access Management	Login through credentials; Secure session handling
FR-2	Image Upload & Validation	Support for JPEG/PNG formats; Automated size validation
FR-3	Automated Preprocessing	Programmatic resizing to 224x224; Pixel normalization
FR-4	AI Classification	Cell identification using MobileNetV2; Inference engine execution
FR-5	Result Visualization	Display of cell class name; Real-time confidence score display
FR-6	Anomaly Detection	Flagging low-confidence predictions for manual lab review

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The interface should be intuitive for clinical staff with minimal training required.
NFR-2	Security	Data transmission between the web app and the model must be encrypted to protect patient privacy.
NFR-3	Reliability	The model must maintain a high validation accuracy of at least 94.8% across different datasets.
NFR-4	Performance	Inference time should be approximately 250ms to ensure real-time diagnostic results.
NFR-5	Availability	The Flask-hosted web application should be accessible 24/7 for laboratory use.

NFR-6	Scalability	The system should be capable of processing batch uploads and handling multiple concurrent users.
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