Solution Requirements (functional &non-functional)

Project Name: HematoVision – Blood Cell Classification
Team ID: LTVIP2026TMIDS47037
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1. Functional Requirements

ID	Requirement	Description
FR01	Upload Blood Sample	The system shall allow lab technicians to upload blood sample images in standard formats (JPEG, PNG).
FR02	Blood Cell Classification	The system shall automatically classify different types of blood cells (RBC, WBC, Platelets) using AI.
FR03	Abnormality Detection	The system shall detect abnormal cells (e.g., sickle cells, leukemia cells) and flag them for review.
FR04	Report Generation	The system shall generate a detailed report with cell counts, abnormalities, and visual charts.
FR05	Real-time Results	The system shall provide classification results in real-time for efficient diagnosis.
FR06	User Authentication	The system shall have secure login for lab technicians, hematologists, and doctors.

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2. Non-Functional Requirements

Category	Requirement	Description
Performance	Response Time	The system shall process each blood sample in less than 30 seconds.
Security	Data Privacy	All patient data shall be encrypted and accessible only to authorized users.
Reliability	Uptime	The system shall maintain 99% uptime to ensure continuous lab operation.
Usability	Interface	The system shall have an intuitive interface for lab technicians with minimal training.
Scalability	Future Growth	The system shall support additional blood tests and image analysis in the future.