Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	31 January 2025
Team ID	LTVIP2025TMID33870
Project Name	Pattern Sense: Classifying Fabric Patterns using Deep 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 Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Image Upload & Management	- Upload fabric images via local file system - Validate image format and size - Preview uploaded image - Store uploaded image in database or cloud
FR-4	Pattern Classification & Results	- Run uploaded image through trained deep learning model - Display predicted fabric pattern (e.g., floral, striped, plaid) - Show confidence score or probability - Option to download or share results

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The system shall offer an intuitive and user-friendly interface for easy image uploads and result interpretation by both technical and non-technical users.
NFR-2	**Security**	The system shall implement secure login and registration mechanisms, including OAuth via Gmail and LinkedIn, and ensure data protection through HTTPS and encrypted user credentials.
NFR-3	**Reliability**	The system shall consistently deliver accurate predictions and handle common system errors (e.g., failed uploads or server timeouts) without crashing.
NFR-4	**Performance**	The system shall respond with classification results within 5 seconds after image upload under normal load conditions.
NFR-5	**Availability**	The system shall maintain at least 99.5% uptime during active hours to ensure accessibility for users and evaluators.

NFR-6	**Scalability**	The architecture shall support scaling to handle increased loads, such as multiple simultaneous image uploads and a growing dataset for model training and inference.