Project Design Phase
Proposed Solution Template

Date	15 February 2025
Team ID	LTVIP2025TMID32512
Project Name	Classifying fabric patterns using deep learning
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Manual classification of fabric patterns is time-consuming, error-prone, and inconsistent, especially with complex textile designs. There's a need for an automated, accurate, and scalable solution.
2.	Idea / Solution description	The solution involves using deep learning models (e.g., CNNs) trained on a labeled dataset of fabric images to automatically identify and classify fabric patterns such as floral, striped, dotted, etc. A web interface or app can be developed to allow users to upload fabric images and receive instant pattern classification.
3.	Novelty / Uniqueness	Unlike traditional image processing methods, this solution leverages deep learning to adaptively learn complex features from diverse fabric textures, improving accuracy over time. It also supports real-time predictions with user-uploaded images.
4.	Social Impact / Customer Satisfaction	This system supports textile workers, designers, and retailers by reducing workload and improving decision-making speed. It can also help visually impaired users recognize fabric patterns.
5.	Business Model (Revenue Model)	A freemium model can be adopted: free basic classification for general users and paid API access or enterprise integration for fashion brands, online fabric stores, or manufacturing units.
6.	Scalability of the Solution	The model can be scaled to include more fabric types and integrated into e-commerce platforms, mobile applications, and inventory management systems. It can also support multilingual UI for wider adoption globally.