Project Design Phase
Proposed Solution Template

Date	23 June 2025
Team ID	LTVIP2025TMID35513
Project Name	pattern sense: classifying fabric patterns using deep learning
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Fabric pattern recognition is largely manual, time-consuming, and prone to errors. Designers, manufacturers, and retailers struggle to accurately classify and catalog fabric patterns, leading to inventory issues, production delays, and limited automation in textile industry processes.
2.	Idea / Solution description	A deep learning-based system that automatically classifies different fabric patterns (e.g., floral, geometric, striped) from images with high accuracy. This solution leverages convolutional neural networks (CNNs) to learn intricate features and provide consistent, fast, and scalable pattern recognition.
3.	Novelty / Uniqueness	Unlike traditional manual or rule-based methods, this solution can learn from vast datasets and improve over time. It provides high precision even for complex or overlapping patterns and can be adapted to new fabric styles and trends with minimal retraining.
4.	Social Impact / Customer Satisfaction	Reduces manual workload, increases operational efficiency, and helps designers focus on creativity instead of repetitive tasks. Manufacturers and retailers gain higher accuracy in cataloging and faster time to market, resulting in improved customer satisfaction and reduced operational costs.
5.	Business Model (Revenue Model)	Licensing the AI-based software as a service (SaaS) to textile manufacturers, fashion retailers, and design studios. Additional revenue through custom model training, integrations, and data analytics services to provide deeper market insights.
6.	Scalability of the Solution	Highly scalable across different fabric types and global markets. The solution can be trained on diverse datasets to support new patterns and trends, and deployed via cloud to accommodate large-scale industrial needs without compromising speed or accuracy.