

Project Design Phase
Proposed Solution Template

Date	27 June 2025
Team ID	LTVIP2025TMID39904
Project Name	Pattern Sense: Classifying Fabric Patterns using Deep Learning
Maximum Marks	2 Marks

Proposed Solution Template:

The project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	<p>In the textile and fashion industries, identifying and categorizing fabric patterns (e.g., floral, striped, polka dot, geometric) is essential for inventory management, design cataloguing, quality control, and customer recommendation systems. Traditionally, this task relies on manual inspection, which is time-consuming, subjective, and prone to inconsistency.</p> <p>With the growth of digital fashion platforms and large-scale textile production, there is a pressing need for an automated, scalable, and accurate method to classify fabric patterns from images.</p>
2.	Idea / Solution description	Pattern Sense is an intelligent fabric pattern classification system powered by deep learning. It aims to automate the recognition and categorization of fabric patterns (e.g., floral, striped, polka dots, geometric, abstract) directly from image data, eliminating the need for manual inspection.
3.	Novelty / Uniqueness	Pattern Sense introduces a novel approach to fabric pattern classification by applying deep learning techniques specifically tailored to the unique visual characteristics of textile patterns — a domain that remains underexplored compared to more common image classification tasks like object or face recognition.
4.	Social Impact / Customer Satisfaction	Pattern Sense has the potential to create meaningful social and economic value by transforming how the textile and fashion industries manage, classify, and

		interact with fabric patterns. Its deep learning-based approach not only streamlines business operations but also improves accessibility, sustainability, and customer satisfaction.
5.	Business Model (Revenue Model)	Pattern Sense is positioned as a B2B (Business-to-Business) and B2B2C (Business-to-Business-to-Consumer) solution targeting the textile, fashion, and e-commerce sectors. The product offers scalable and intelligent fabric pattern classification through AI, and the revenue model is built around multiple monetization streams.
6.	Scalability of the Solution	Pattern Sense is inherently designed to scale — both in terms of technology and business impact — to meet the growing demands of global textile, fashion, and e-commerce industries. Its modular, AI-driven architecture and cloud compatibility ensure that the solution can be easily expanded, upgraded, and adapted for broader use.