Project Design Phase

Problem – Solution Fit Template

Date	15 February 2025
Team Id	LTVIP2025TMID41819
Project Name	Pattern sense:classifying fabricpatterns using deep learning
Maximum Marks	5 Marks

Problem – Solution Fit Template:

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers, and corporate innovators identify behavioral patterns and recognize what would work and why.

Purpose:

- To automate the classification of fabric patterns using deep learning models.
- To enhance textile manufacturing quality and design matching through intelligent visual recognition.
- To reduce manual errors and accelerate the process of fabric inspection and cataloging.
- To provide a user-friendly interface for textile professionals to upload fabric images and receive instant pattern classification results.

Problem:

In the textile industry, manual identification and classification of fabric patterns:
- Is time-consuming and inefficient
- Leads to frequent human errors in sorting and labeling
- Is difficult to scale in large production units
- Results in inconsistent quality due to subjective decisions

Small and mid-sized textile businesses often lack the advanced tools to automate this task efficiently.

Solution:

Pattern Sense is a deep learning-based system that automatically identifies and classifies fabric patterns:
- Utilizes Convolutional Neural Networks (CNNs) for visual pattern recognition
- Offers a simple image upload interface for ease of use
- Delivers fast and accurate pattern classification results

- Allows customization with industry-specific fabric datasets
- Can be integrated into existing textile software platforms

Key Benefits:

- Increased Efficiency: Rapid classification accelerates textile processing.
- Higher Accuracy: Reduces subjective human error in pattern recognition.
- Cost Saving: Reduces manpower costs and production downtime.
- Adaptable: Can be trained for traditional, modern, or abstract fabric styles.
- Trusted Interface: Results are visual and can be verified by the user easily.

User Behavior Insight:

- Textile professionals use smartphones or scanners to document fabric designs.
- There is a growing interest in automation tools in the textile sector.
- Workers and designers are familiar with basic image upload tools.
- Fast and reliable tools are more likely to be adopted if they improve consistency.

Problem–Behavior Fit Strategy:

- Frequent Annoyance Solved: Time spent on pattern labeling and classification.
- Urgent Problem: Wrong classification leads to inventory errors and miscommunication.
- Trigger: Upload fabric image → get label instantly → reduce manual verification.
- Channels: Web portal, desktop application for production units.
- Adoption: Users gradually build trust through consistent results and feedback integration.

References:

https://www.ideahackers.network/problem-solution-fit-canvas/
https://medium.com/@epicantus/problem-solution-fit-canvas-aa3dd59cb4fe