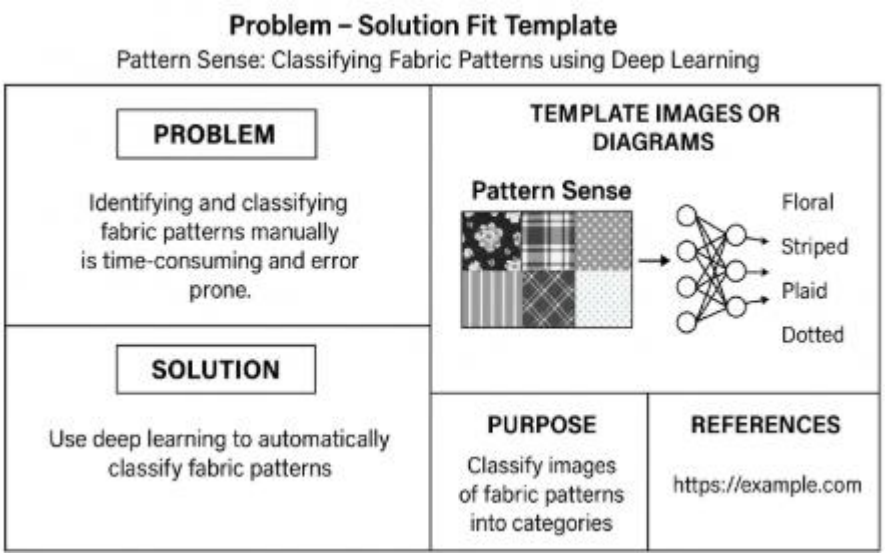
Project Design Phase
Problem – Solution Fit Template

Date	15 February 2025
Team ID	LTVIP2025TMID33870
Project Name	Pattern Sense: Classifying Fabric Patterns using Deep Learning
Maximum Marks	2 Marks

Problem – Solution Fit Template:

Manual classification of fabric patterns in the textile industry is inefficient and often inaccurate. This leads to increased labor costs, inconsistent quality control, and delays in production cycles.
'Pattern Sense' offers a deep learning-based image classification system that automatically identifies and categorizes fabric patterns. Using a trained convolutional neural network (CNN), the system recognizes various designs such as geometric, floral, abstract, and more, offering precision and scalability.

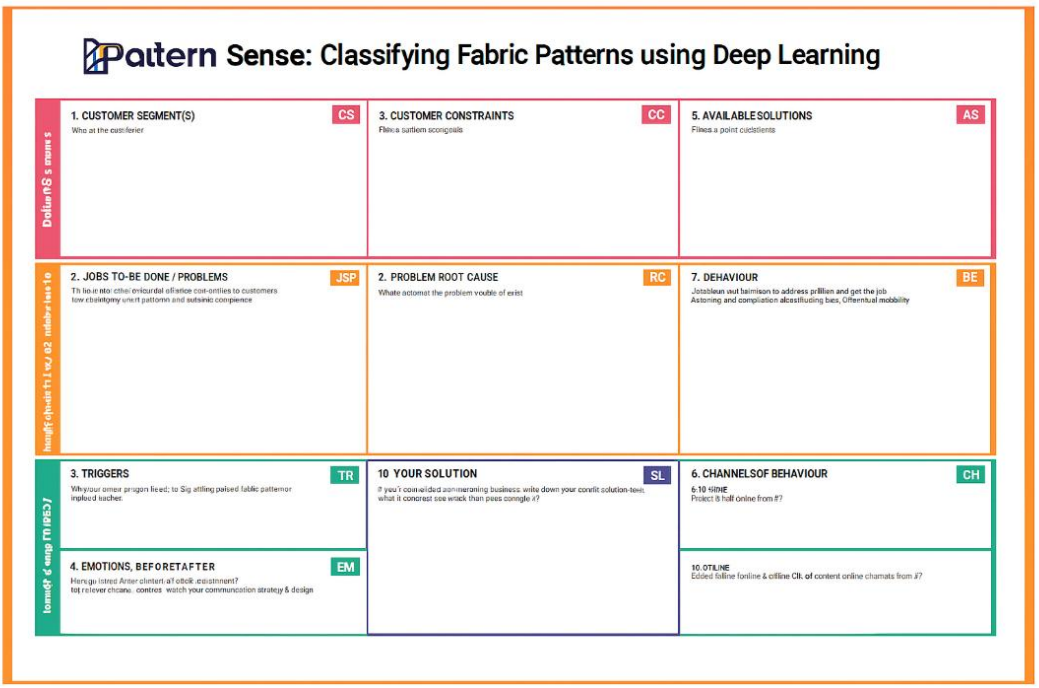


Purpose:

Here is the purpose of **Pattern Sense** presented in point form:

- Automate the detection and classification of fabric patterns using deep learning.
- Improve quality control by ensuring consistent and accurate pattern recognition.
- Streamline inventory management by categorizing fabric types automatically.
- Assist in automated cataloging for textile businesses and e-commerce platforms.
- Reduce dependency on manual labor and minimize human error.
- Bridge the gap between traditional textile processes and AI-driven solutions.
- Enhance overall efficiency and competitiveness in the textile industry.

Template:



References:

- TensorFlow: https://www.tensorflow.org/
- PyTorch: https://pytorch.org/
- Fashion-MNIST Dataset: https://github.com/zalandoresearch/fashion-mnist
- Deep Learning for Image Classification: https://www.analyticsvidhya.com/blog/2021/06/image-classification-using-deep-learning/