

Ideation Phase

Brainstorm & Idea Prioritization

Template

Date	31 January 2025
Team ID	LTVIP2025TMID25174
Project Name	pattern sense: classifying fabric patterns using deep learning
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization Template:

team Gathering, Collaboration and Select the Problem Statement

Problem Statement Selected:

There is a growing need for automated systems to identify and classify various fabric patterns accurately in the textile industry. Manual classification is time-consuming, inconsistent, and prone to errors.

Team Collaboration Insight:

Our team collaborated to explore issues faced by designers, manufacturers, and retailers in fabric classification. After discussing several potential project ideas, we prioritized the one with the most practical impact and technical feasibility: using deep learning to automate fabric pattern classification.

Step-2: Brainstorm, Idea Listing and Grouping

Ideas Generated:

Use a CNN (Convolutional Neural Network) model for pattern classification.

Collect a dataset with various types of fabric patterns (floral, geometric, abstract, etc.).

Perform image preprocessing (resizing, normalization, augmentation).

Train, validate, and test the model using standard metrics like accuracy and F1 score.

Deploy the model into a web or mobile interface for real-world usage.

Explore transfer learning with pre-trained models like ResNet or VGG for better accuracy.

Step-3: Idea Prioritization

Data Preparation:
Dataset collection, annotation, and preprocessing.

Modeling: CNN architecture design, training, testing.

Deployment: Interface development and model integration.

Improvement & Evaluation: Using transfer learning, improving accuracy, cross-validation

