Brainstorm & Idea Prioritization Template

Date:
31 January 2025

Team ID:
(To be filled in if applicable)

Project Name:
Pattern Sense: Classifying Fabric Patterns using Deep Learning

Maximum Marks:
4 Marks

Step-1: Team Gathering, Collaboration and Select the Problem Statement

The team identified a real-world problem in the fashion, textile, and interior design industries — the need for automating the identification and categorization of fabric patterns. Manual classification is time-consuming and prone to errors. We chose to address this problem using deep learning.

Problem Statement:
How can we build an automated system using deep learning techniques to accurately identify and classify fabric patterns?

Step-2: Brainstorm, Idea Listing and Grouping

Ideas generated:

- - Use Convolutional Neural Networks (CNNs) for image classification.
- - Collect a labeled dataset of different fabric patterns (e.g., floral, geometric, abstract, stripes).
- - Apply data augmentation to increase the dataset diversity.
- - Use transfer learning with pre-trained models like ResNet or EfficientNet.
- - Build a user-friendly interface for uploading and analyzing fabric images.
- - Categorize predictions into industry-relevant tags (e.g., for fashion, home decor).
- - Provide real-time pattern suggestions or matches.

Grouping of Ideas:

- - Data & Collection: Labeled datasets, augmentation.
- - Model Development: CNNs, transfer learning.
- - User Experience: Web or app interface, live prediction.
- - Application Areas: Fashion, textiles, interior design.

Step-3: Idea Prioritization

- High Priority:
    - CNN implementation with transfer learning.
    - Creating a robust and diverse dataset.
    - User interface for easy access.
- Medium Priority:
    - Real-time classification.
    - Tagging patterns based on application area.
- Low Priority (Future scope):
    - Integration with AR for visualizing patterns.