**Project Design Phase**

**Proposed Solution Template**

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| Date | 27 June 2025 |
| Team ID | LTVIP2025TMID41423 |
| Project Name | Pattern Sense: Classifying Fabric Patterns using Deep Learning |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in the proposed solution template.

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Traditional methods for classifying fabric patterns are manual, time-consuming, and prone to human error. There is a need for a faster, more reliable automated system. |
|  | Idea / Solution description | Our solution uses a deep learning-based image classification system that identifies and categorizes fabric patterns using transfer learning on CNN models. |
|  | Novelty / Uniqueness | Unlike conventional textile classifiers, our system leverages pre-trained neural networks and a custom dataset, ensuring higher accuracy with less training time. |
|  | Social Impact / Customer Satisfaction | This solution benefits textile designers, manufacturers, and e-commerce platforms by reducing misclassification, improving productivity, and ensuring customer trust. |
|  | Business Model (Revenue Model) | The solution can be offered as a subscription-based SaaS model to textile industries and retail platforms or integrated into quality inspection systems. |
|  | Scalability of the Solution | The system can be scaled to classify hundreds of fabric types and extended to detect defects, texture quality, or even design trends across global textile markets. |