**Project Design Phase**

**Proposed Solution Template**

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| Date | 27 June 2025 |
| Team ID | LTVIP2025TMID59839 |
| 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) | Manual classification of fabric patterns is time-consuming, inconsistent, and error-prone, especially with high-volume textile production environments. |
|  | Idea / Solution description | This project proposes an automated deep learning-based fabric pattern classification system using transfer learning, enabling accurate and fast categorization. |
|  | Novelty / Uniqueness | The novelty lies in applying transfer learning with advanced CNN architectures (like ResNet) to distinguish complex and similar-looking textile patterns. |
|  | Social Impact / Customer Satisfaction | The solution ensures quality control, reduces manual labor, enhances production efficiency, and improves customer satisfaction through consistent pattern accuracy. |
|  | Business Model (Revenue Model) | The model can be offered as a SaaS tool or integrated into textile ERP systems for factories, fashion houses, and garment retailers. |
|  | Scalability of the Solution | The model can scale across various textile industries with different pattern types and can be deployed on cloud, edge devices, or embedded systems. |