# Proposed Solution Template

Date: 26 June 2025

Team id: LTVIP2025TMID43376

Project Name: Pattern Sense - Classifying Fabrics Using Deep Learning

Maximum Marks: 2 Marks

Proposed Solution Template:

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| 1. Problem Statement (Problem to be solved) | Manual fabric pattern classification is time-consuming, inconsistent, and prone to errors. There is a need for an automated, accurate method to classify fabric patterns in real-time. |
| 2. Idea / Solution description | Develop a deep learning model (CNN-based) to classify fabric patterns such as twill, satin, and plain weave using image data. The system will integrate with camera modules for real-time quality control. |
| 3. Novelty / Uniqueness | Unlike traditional methods, this solution leverages convolutional neural networks and transfer learning to deliver high classification accuracy. It adapts to various lighting and texture conditions. |
| 4. Social Impact / Customer Satisfaction | The solution enhances textile production efficiency, reduces human error, and supports local industries in modernizing their QC processes. Customers benefit from consistent product quality. |
| 5. Business Model (Revenue Model) | Revenue from licensing the software to textile manufacturers, offering customization services, and potential SaaS subscription for cloud-based analysis. |
| 6. Scalability of the Solution | The system can be scaled to work across various fabric types and industrial setups, including integration with IoT-enabled manufacturing lines for predictive analytics. |
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