**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | 31 January 2025 |
| Team ID | LTVIP2025TMID38289 |
| Project Name | Fabrics Using Deep-Learning |
| Maximum Marks | 4 Marks |

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| | **S.No** | **Requirement Name** | **Description** | | --- | --- | --- | | F1 | Upload Fabric Image | System must allow the user to upload fabric images (JPG/PNG) for analysis. | |  |  |  | | F2 | Preprocess Fabric Image | Images should be resized, normalized, and cleaned before feeding to the model. | | F3 | Train Deep Learning Model | System should be able to train CNN model on labeled fabric dataset. | | F4 | Predict Fabric Type/Defects | Given a new image, the model should predict fabric type or defect presence. | | F5 | Display Results | System should present prediction results in user-friendly text/visual format. | | F6 | Store Prediction History | All results should be saved in a database for future reference. | | F7 | Model Evaluation & Accuracy | System should evaluate model using metrics like accuracy, precision, recall. | | F8 | Admin Management | Admin should be able to manage datasets, model retraining, and logs. | |

| **S.No.** | **Requirement Name** | **Description** |
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| NF1 | Performance | Model inference time should be under 3 seconds per image. |
| NF2 | Accuracy | System must maintain at least 90% accuracy after training. |
| NF3 | Scalability | Should support large dataset sizes and growing data volumes. |
| NF4 | Usability | User interface should be intuitive and accessible to non-technical users. |
| NF5 | Security | Image uploads and user data must be securely stored and transferred (HTTPS). |
| NF6 | Availability | System should be accessible 24/7 with minimal downtime. |
| NF7 | Maintainability | Codebase and models should be modular and easy to update or retrain. |
| NF8 | Compatibility | Should work across modern web browsers and OS platforms. |
| NF9 | Data Privacy | No unauthorized access to user-uploaded fabric data/images. |