Pattern Sense – Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	29 June 2025
Team ID	LTVIP2025TMID32913
Project Name	Pattern Sense: Classifying Fabric Patterns Using Deep Learning
Max Marks	4 Marks

Technical Architecture

The deliverable shall include the architectural diagram and the details as per the tables below.

Example Reference: Order processing during pandemics (offline mode)
Source: IBM Developer Architecture Pattern

Table-1: Components & Technologies

S.No	Component Description	Technology
1	User Interface – How users interact with the app	HTML, CSS
2	Application Logic-1 – Core processing logic	Python (Flask / Django), numpy , pandas
3	Application Logic-2 – Image classification	CNN-based Deep Learning Model (TensorFlow / Keras)
4	Application Logic-3 – Post-processing / Visualization	Matplotlib / Chart.js

Table-2: Application Characteristics

S. No	Characteristics	Description	Technology
1	Open-Source Frameworks	Frameworks and libraries used in app development	React, Flask, TensorFlow, Keras
2	Security Implementations	Authentication, access control, encryption, secure APIs	SHA-256, JWT, HTTPS, Firebase Auth

3	Scalable Architecture	Modular microservices, elastic deployment for scaling	Docker, Kubernetes, AWS Lambda
4	Availability	Ensures system uptime and failure resistance	Load Balancer, Multi-Zone Cloud Infra
5	Performance	Fast image upload & prediction, use of cache, CDN for static content	Redis, Cloudflare CDN, Asynchronous APIs