

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	1 July 2025
Team ID	LTVIP2025TMID42218
Project Name	Pattern Sense: Classifying Fabric Patterns using Deep Learning
Maximum Marks	4 Marks

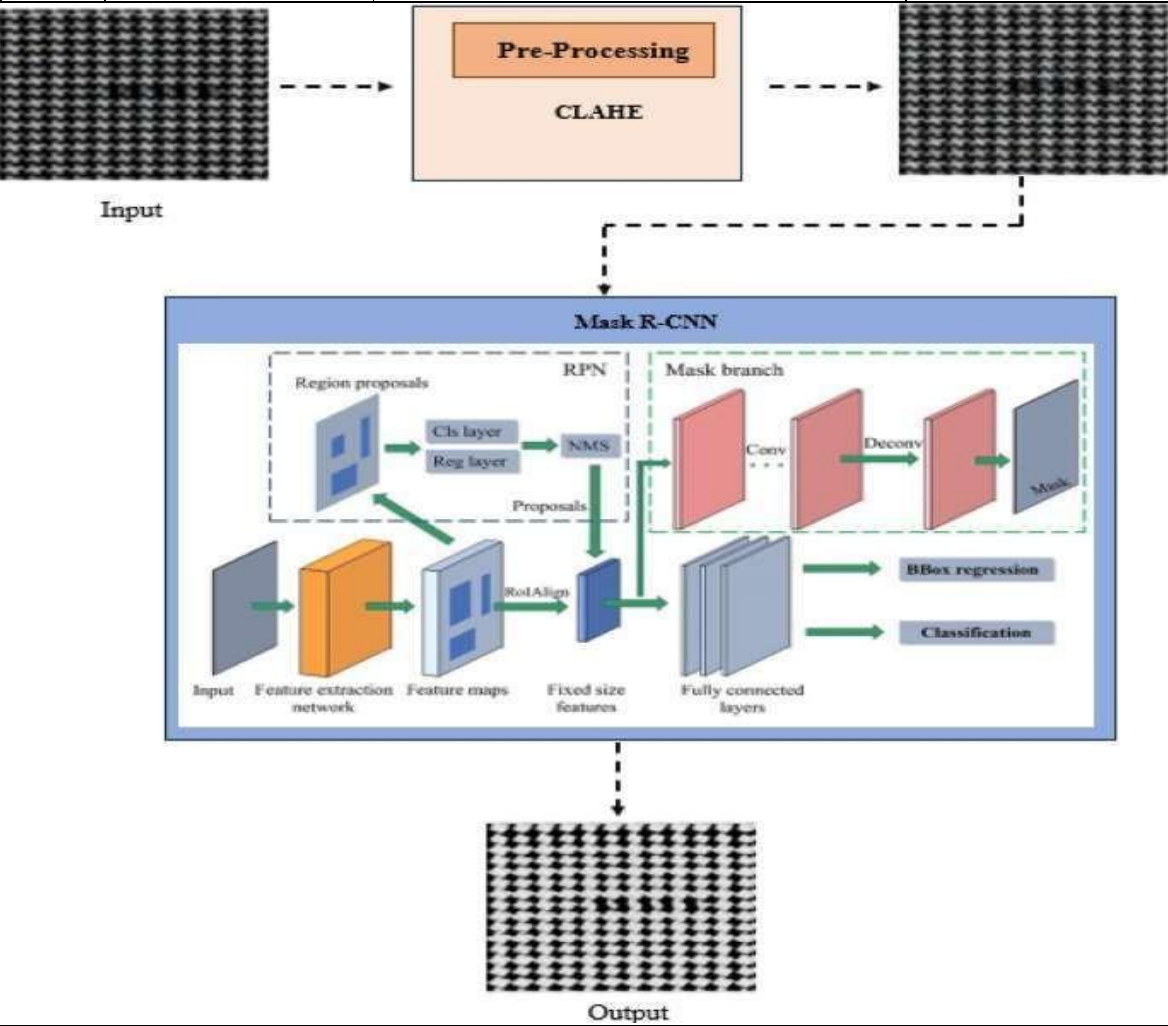
Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processingduringpandemics/>

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application (Web Page)	HTML, CSS, Bootstrap, Flask (Python)
2.	Applica on Logic	Logic for a process in the application	Python
3.	File Storage	File storage requirements	Stores predicted images in Local Filesystem

4.	Machine Learning Model	Purpose of Machine Learning Model	VGG16
----	------------------------	-----------------------------------	-------



5.	Data	Data used to train the model	Dataset from Kaggle
----	------	------------------------------	---------------------

Table-1: Components & Technologies:

Table-2: Applica on Characteristics:

S.No	Characteristics	Description	Technology
1.	Architecture	Layered and modular architecture separating UI, logic, model, and storage.	REST API, MVC Pattern, Docker, Kubernetes
2.	User Interface	Enables users to upload fabric images and view classification results.	React.js / Vue.js, HTML5, CSS3

3.	API Interface	Facilitates image classification and feedback via RESTful endpoints.	Fast API / Flask, Swagger for documentation
4.	Security	Secures user data and API access.	HTTPS, JWT / API Keys, OAuth

References: <https://c4model.com/> <https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/> <https://www.ibm.com/cloud/architecture> <https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>