Machine Learning Operations (MLOps)

Introduction

What is MLOps?

-Machine Learning Operations involves a sequence of steps implemented to deploy an ML model to the production environment.

-MLOpsis a set of **practices, principles, and tools**

that combine **Machine Learning (ML), DevOps, and Data Engineering**to streamline the **end-to-end machine learning lifecycle**—from data preparation and model development to deployment, monitoring,

and continuous improvement in production.

Why MLOps?

- MLModelsrelyonreal-world data for predicting.
- Debugging ML Model.
- ML Model Versioning with different parameters.
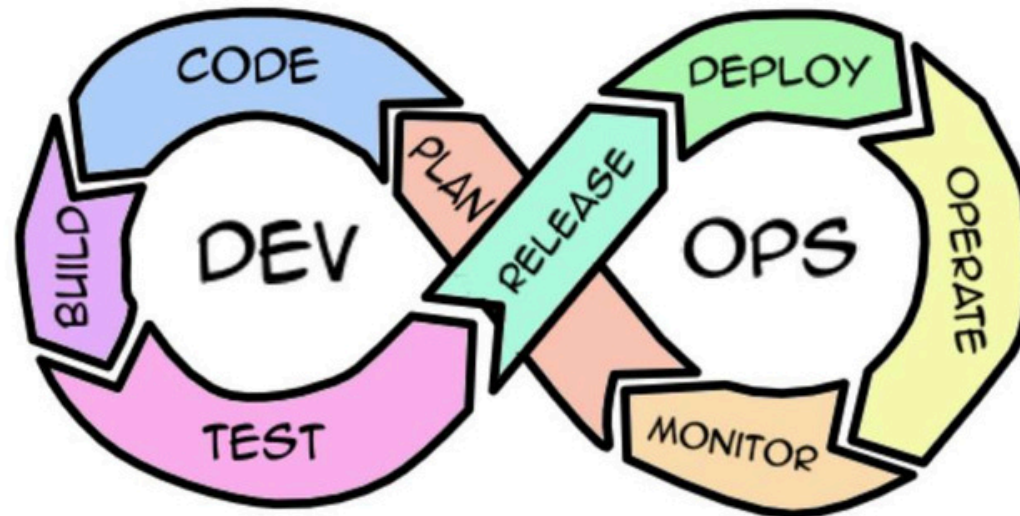- ML Model monitoring.
- DatabasesandML Models.

DevOps vs MLOps

DevOpsstagesaretargeted for developing a software application.

You plan the features of the application you want to release, write code, build the code, test it, create a release plan and deploy it.

DevOpsmonitor the infrastructure where the app is deployed and circle is continued.
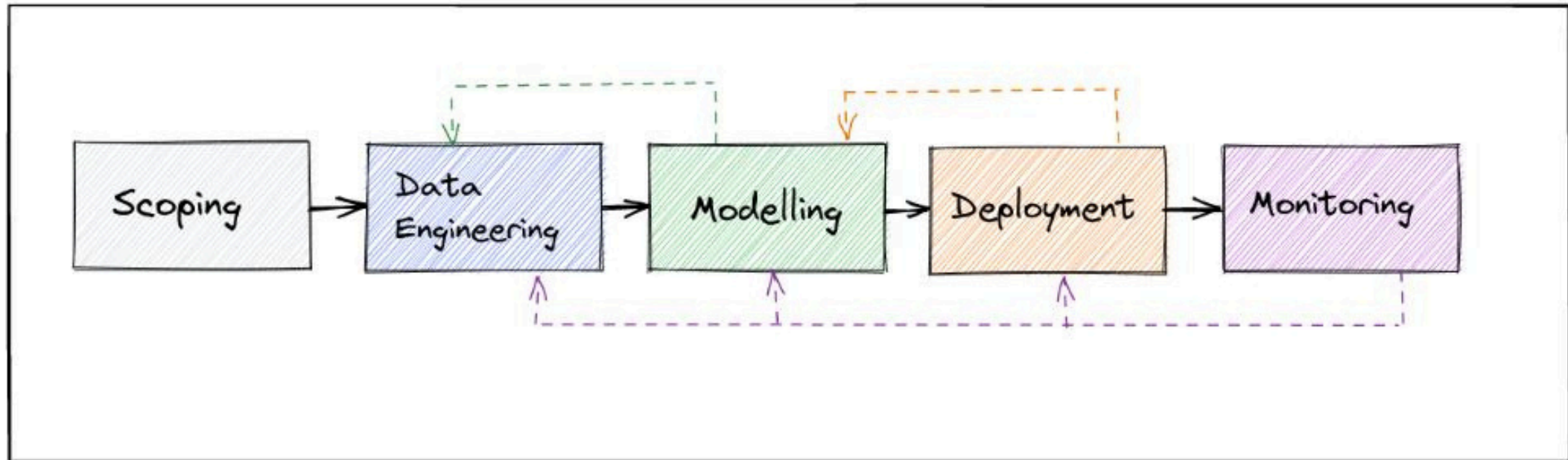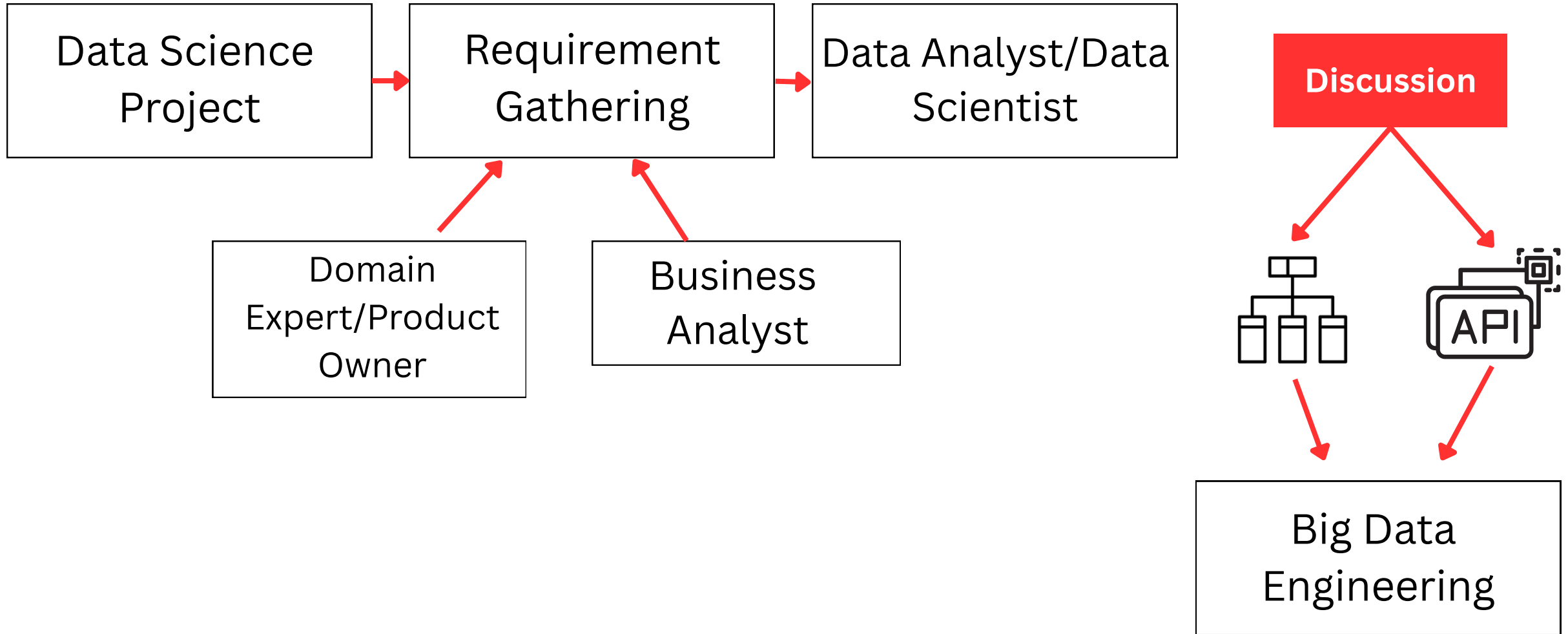
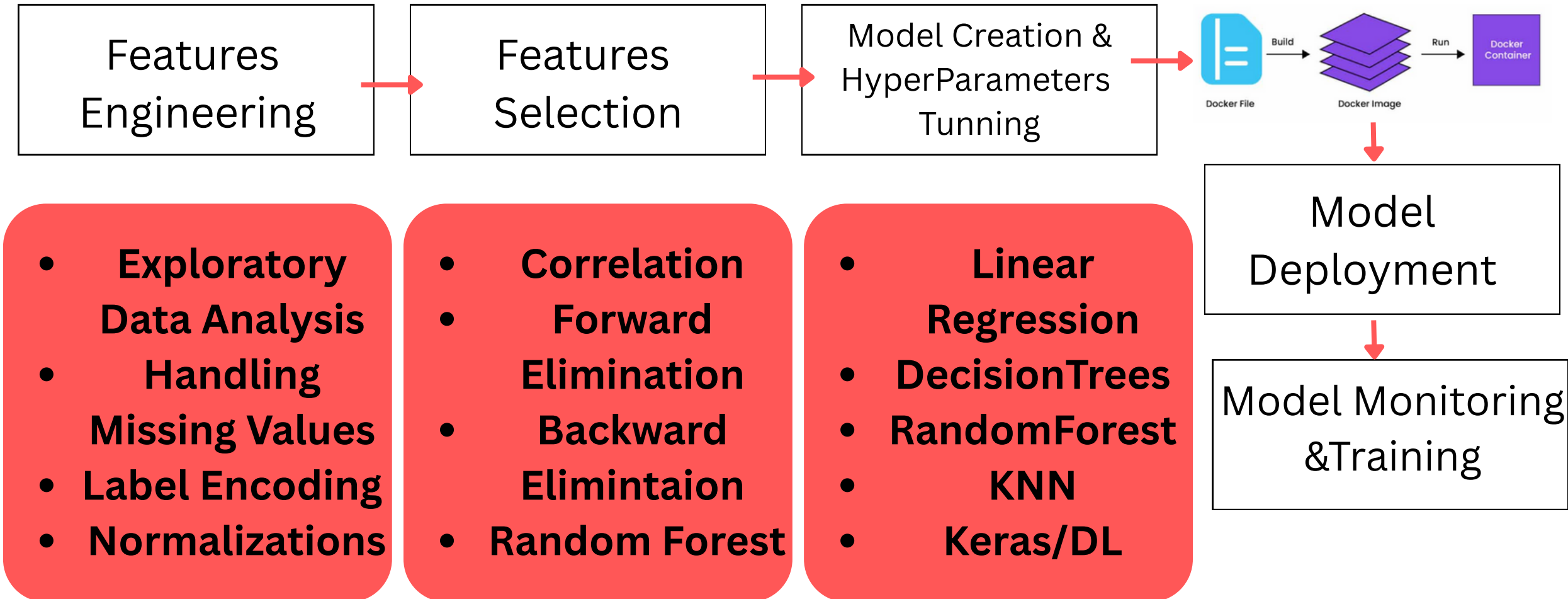**->MLOps**is relatedtoMachine Learning.

->Machine Learningmodel development process contains **Scoping**, **Data Engineering**, **Modelling**, **Deployment** and **Monitoring**.

MLOPS Stacks

MLOPS Stacks

Features Engineering	Features Selection	Model Creation & HyperParameters Tunning	
• **Exploratory Data Analysis** • **Handling Missing Values** • **Label Encoding** • **Normalizations**	• **Correlation Forward Elimination** • **Backward Elimintaion** • **Random Forest**	• **Linear Regression** • **DecisionTrees** • **RandomForest** • **KNN** • **Keras/DL**	**Model Deployment** **Model Monitoring &Training**

MLOps Stacks