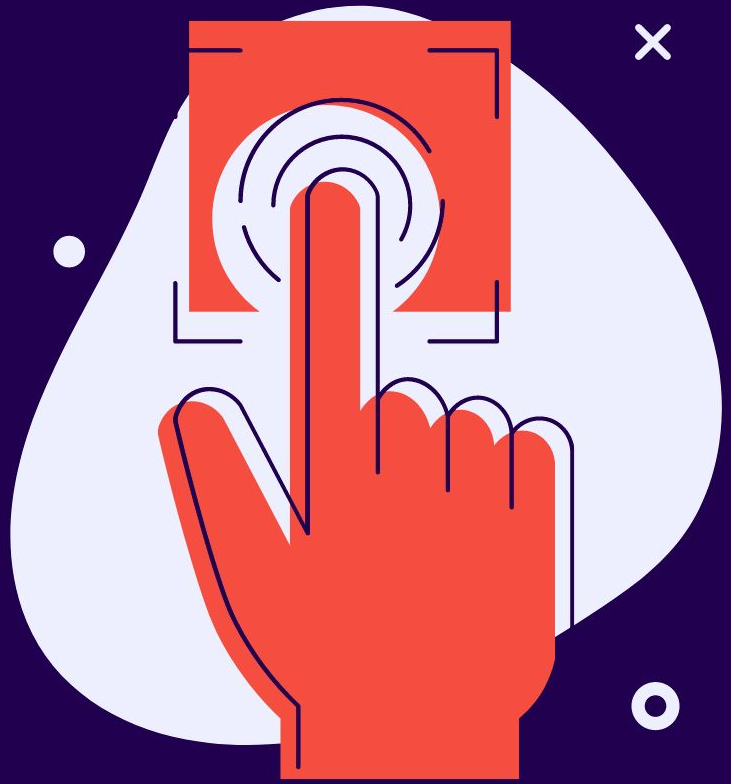
MATIX

manufacturing optimization engine



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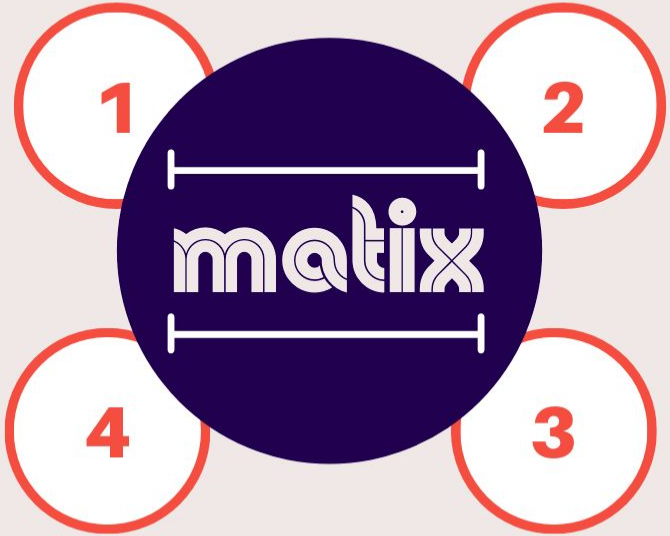
IIIT Bhubaneswar

Problem Statement

CURRENT MANUFACTURING

User interface presenting current manufacturing layout



OPTIMIZING MANUFACTURING

Optimal usage of manufacturing lines prioritizing current orders, backlogs, demand forecast

FACTORY LAYOUT

Featuring factory layout providing funcionality for complete order flow.

DEMAND FORECAST

Forecasting demand based on previous data and dynamic factors.

Challenges

1. Appropriate Integration of necesary modules for developing roboust system
2. Scheduling for optimal usage reducing cost and maximizing throughput
3. Correlating external factors which leads for dependencu on optimal usage.

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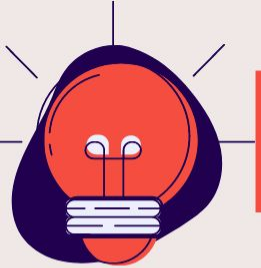
Solution

A roboust framework interface featuring manufacturing orders functionality with forecasting future demand to find the optimal usage of lines.



TECH STACK

matix

Web Application Development

Database Management System

sqlite3

Machine Learning

lightGBM

scikit learn

NLTK

Data Mining & API

requests

bs4

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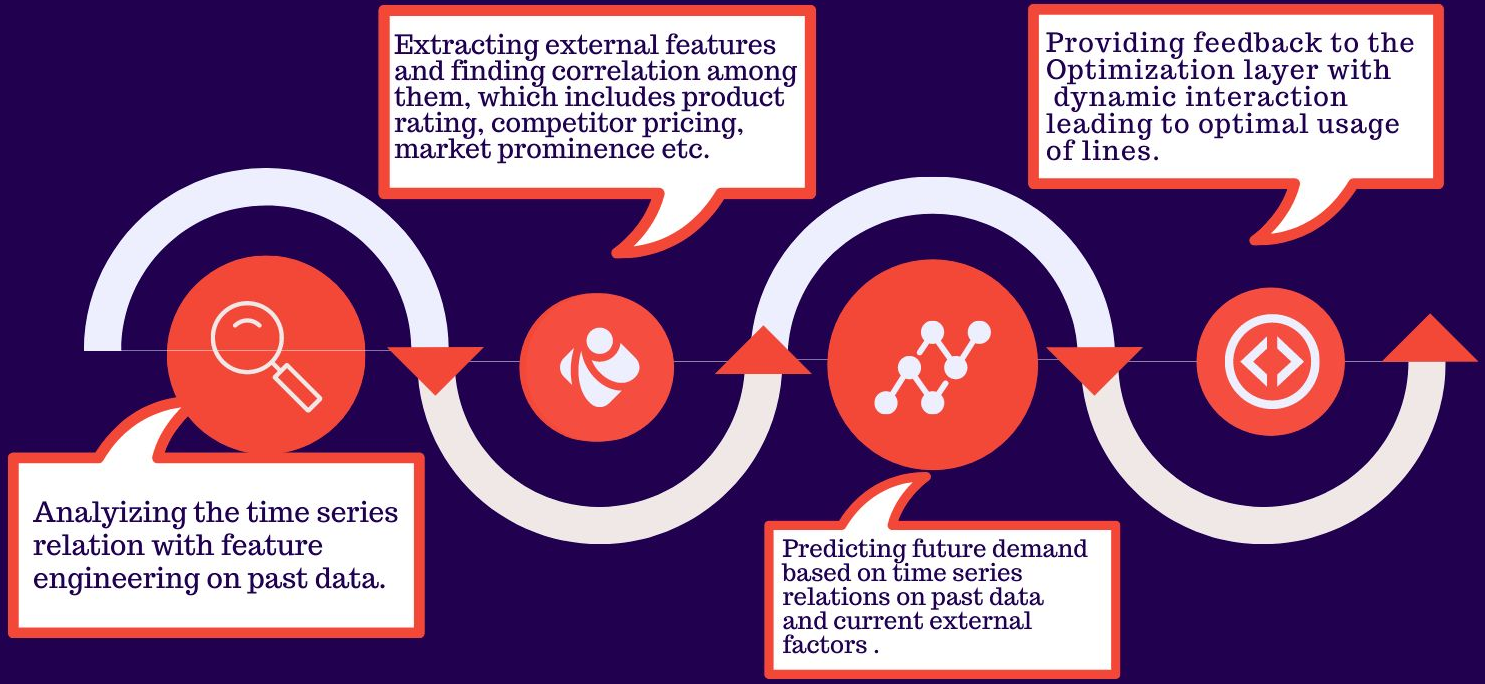
Future scope

Notifier feature to changes lines

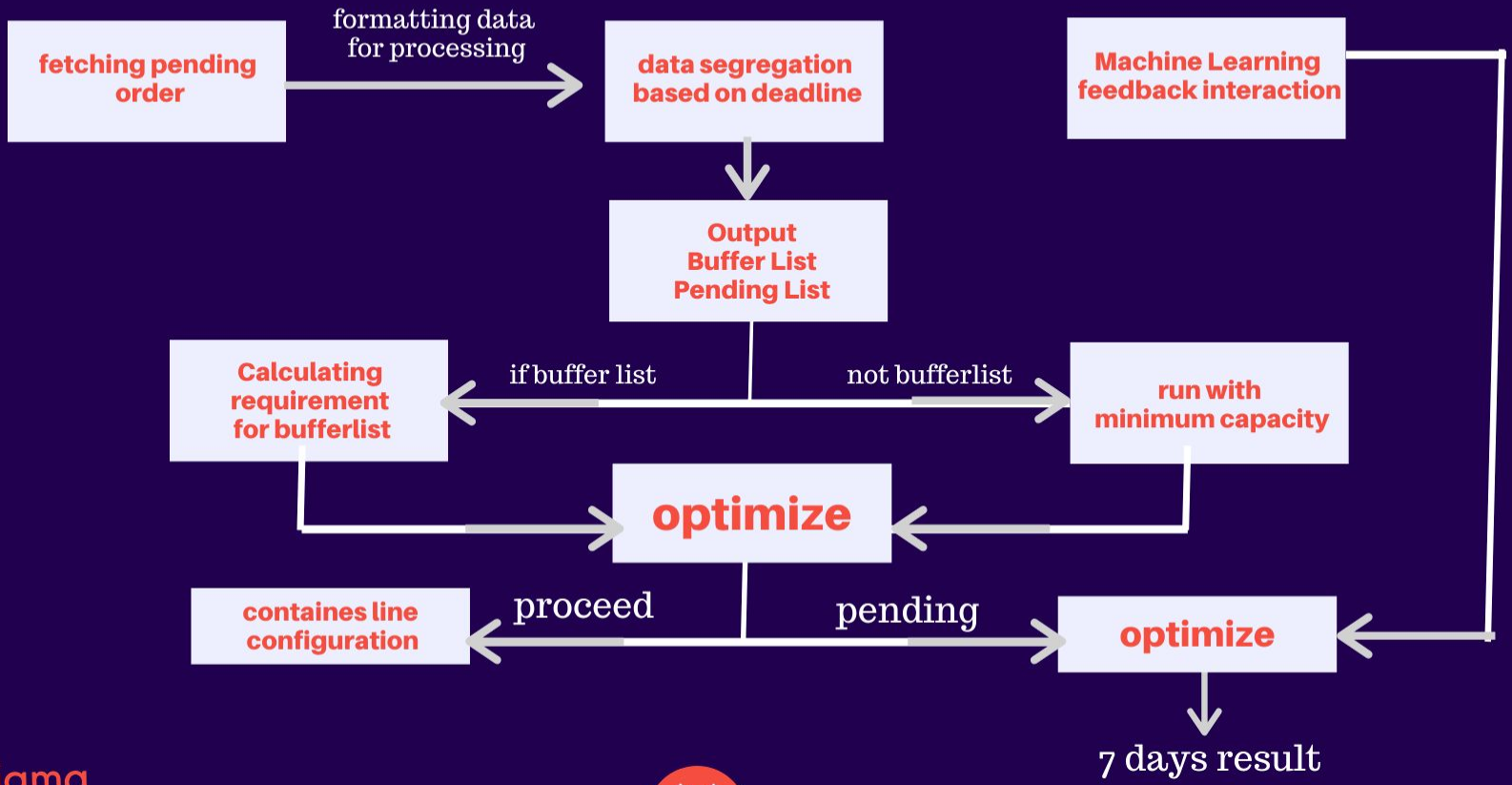
Buffer inventory management

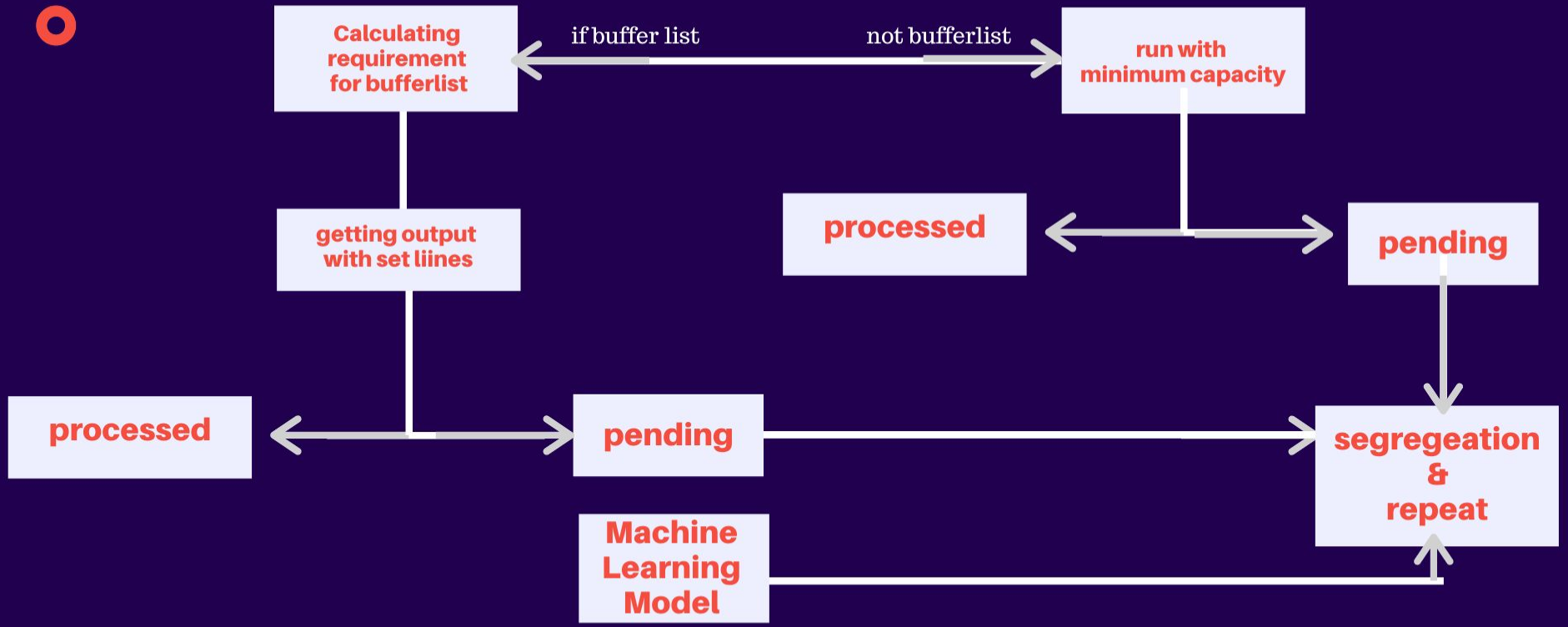
Better prediction with roboustness

machine learning layer



Optimization Layer





Demo Dataset: [2 9s, 6 2s] **Lines: 3**

Solution: [9,9,12]

Optimized Solution: [9,11,10] (saved 1 hour)

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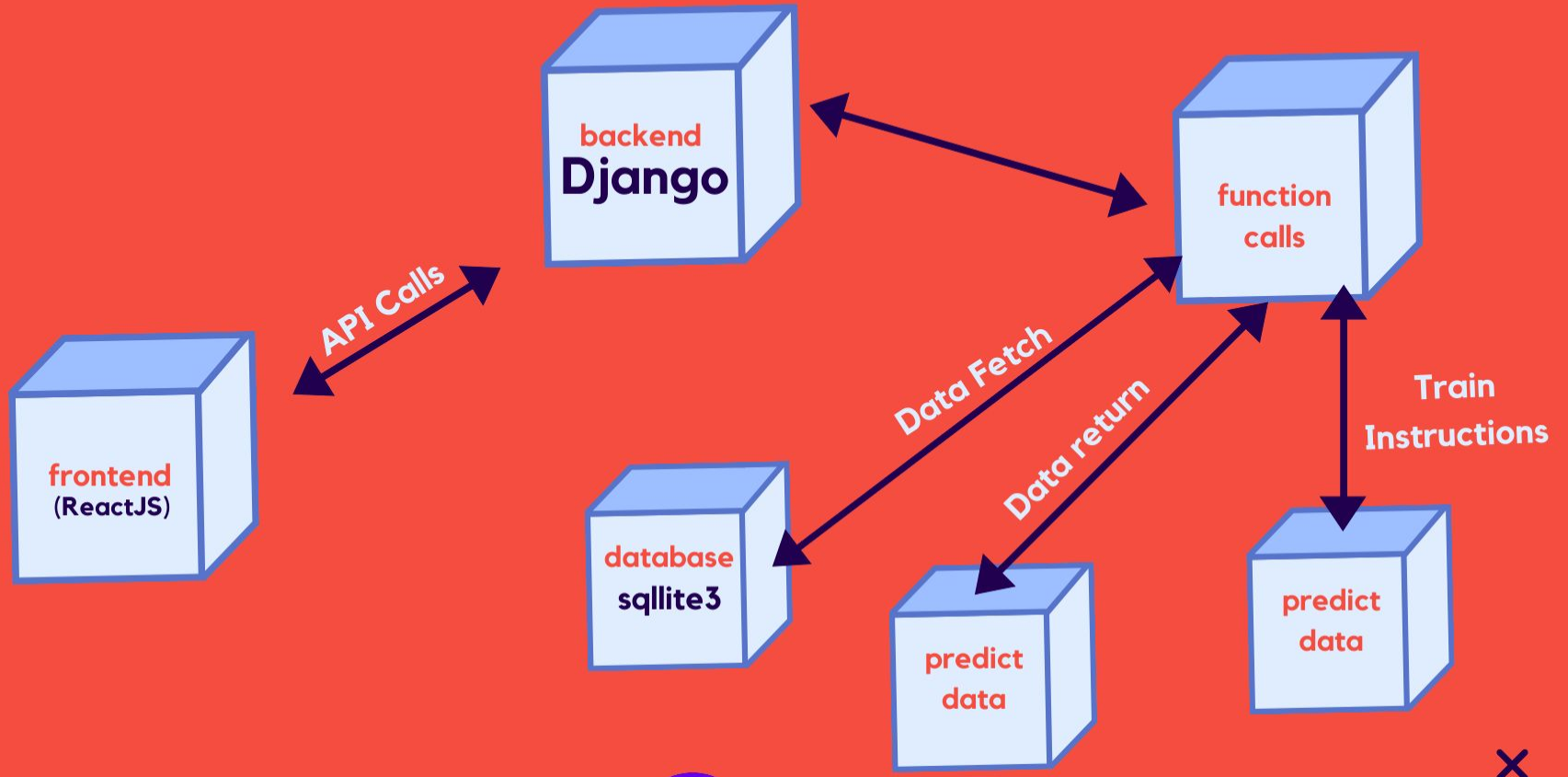
What's in the backend?



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Thank you!