DISJOIN

Technical Document

Overview

Covid 19 pandemic has changed the way we live and shop.

To ensure social distancing and avoid crowd at grocery stores, here we are, with a solution!

Real-time live updates on the customer count at a given store.

Prediction for the next 2 days to help you pick a time to visit the store

Problems being solved

- Lack of social distancing
- Long wait time in queue
- Time management for the grocery admins
- High density of people in the store

Tech Stack

Frontend: React js (deployed on Heroku)

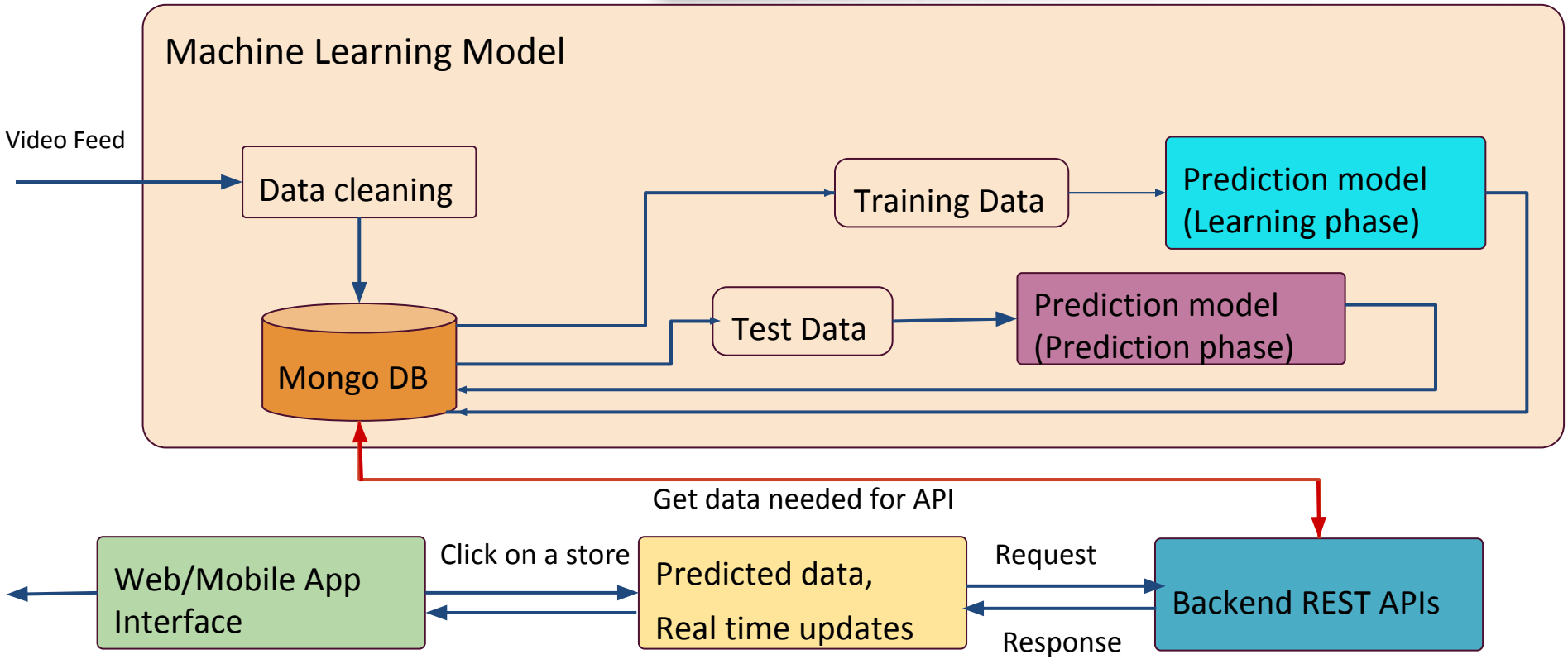
Backend:

REST API (deployed on Heroku)

Prediction Engine - Supervised Machine Learning Model: Python (Tensorflow)

Video Feed to Mongo DB

Architecture



Architecture description

Prediction Model:

- Data is cleaned and processed from the video feed
- This training data is stored in Mongo DB
- The next day’s store customer count is predicted based on the last two weeks using Prediction engine. This is plotted on a histogram
- Live update of a store’s customer count is also provided as a foot traffic meter that fluctuates as the customer count changes.

Architecture description

Backend APIs:

- API for fetching the list of stores.
- API for fetching customer count to be shown in live foot traffic meter
- API for getting the time series data to show the past data on a histogram

Frontend:

- List of stores layout
- Click on a store to view data for a single store
- Store detail page has live foot traffic meter - shows percentage and count of customers
- Store detail page has histogram plotted for the past two weeks

UML - Sequence Diagram