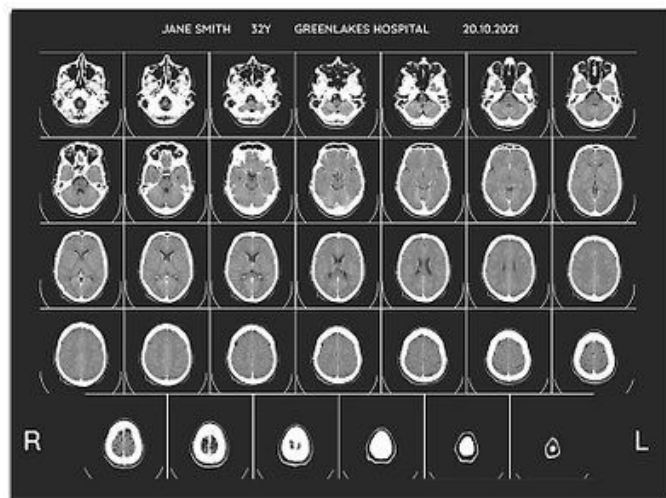


Potential Injuries in CT Scans of Trauma Patients

Capstone Sprint 1

Babak Davani





Problem Area

My area of interest is detecting severe injuries and active internal bleeding in abdominal organs, particularly focusing on blunt force abdominal trauma. This presents a critical challenge in emergency medicine as prompt diagnosis is crucial for effective treatment.



Emergency medicine doctors and nurses

ED administrators

Surgeons

Radiologists

Patients




Impact

The potential impact of this project is significant. **Efficiently** detecting and classifying injuries can lead to expedited treatment, potentially **saving lives** in emergency situations. Additionally, it can reduce the overall **cost** of healthcare by minimizing the **time** spent on diagnosis and treatment planning. This could translate to substantial savings in healthcare expenses, as well as an improvement in the quality of life for affected individuals.



Data Source



Featured Code Competition

RSNA 2023 Abdominal Trauma Detection

Detect and classify traumatic abdominal injuries

RSNA Radiological Society of North America 1,123 teams 3 days ago

\$50,000 Prize Money

Overview Data Code Models Discussion Leaderboard Rules Team Submissions **Late Submission** ...

Dataset Description

The goal of this competition is to identify several potential injuries in CT scans of trauma patients. Any of these injuries can be fatal on a short time frame if untreated so there is great value in rapid diagnosis.

This competition uses a hidden test. When your submitted notebook is scored, the actual test data (including a full length sample submission) will be made available to your notebook.

Files

Files

1500869 files

Size

460.34 GB

Type

dcm, nii, csv

Data Introduction

3,147 Rows (Patients)

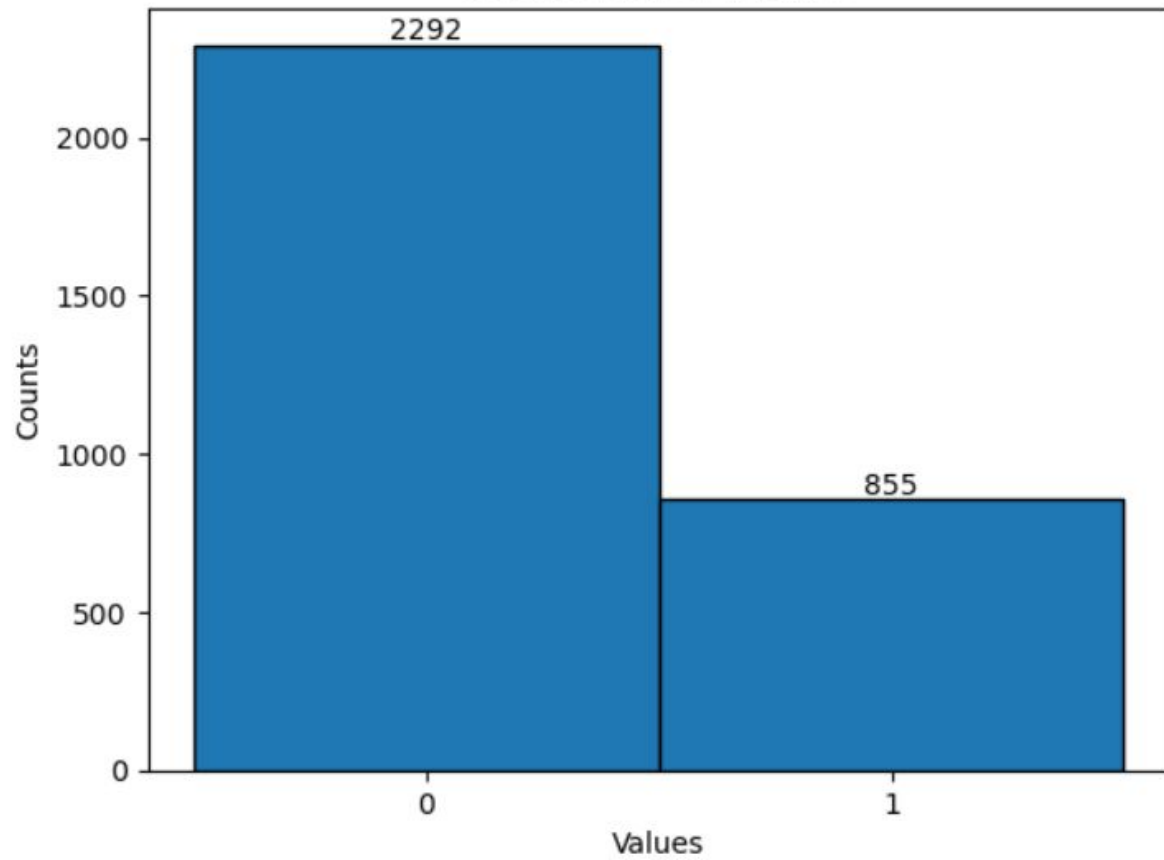
14 Labels(Conditions)

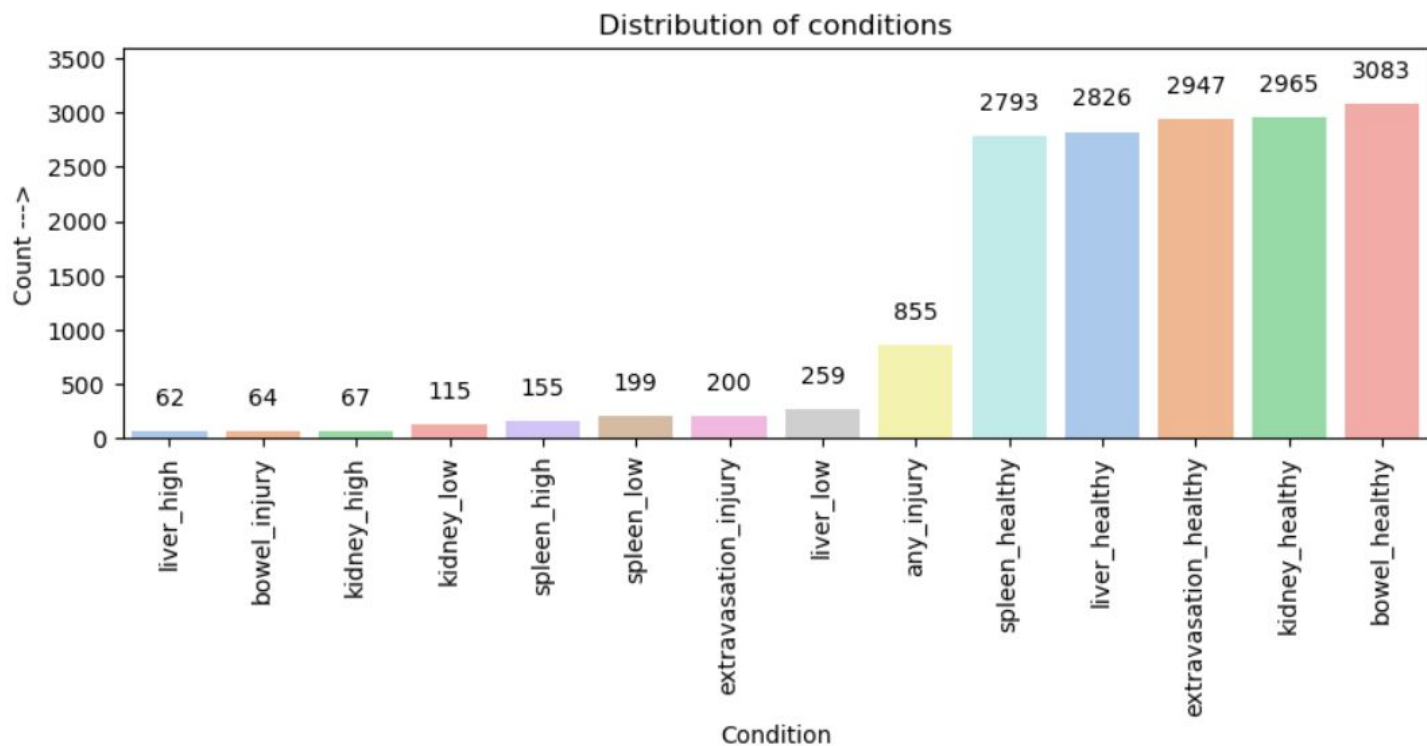
1,500,653 images

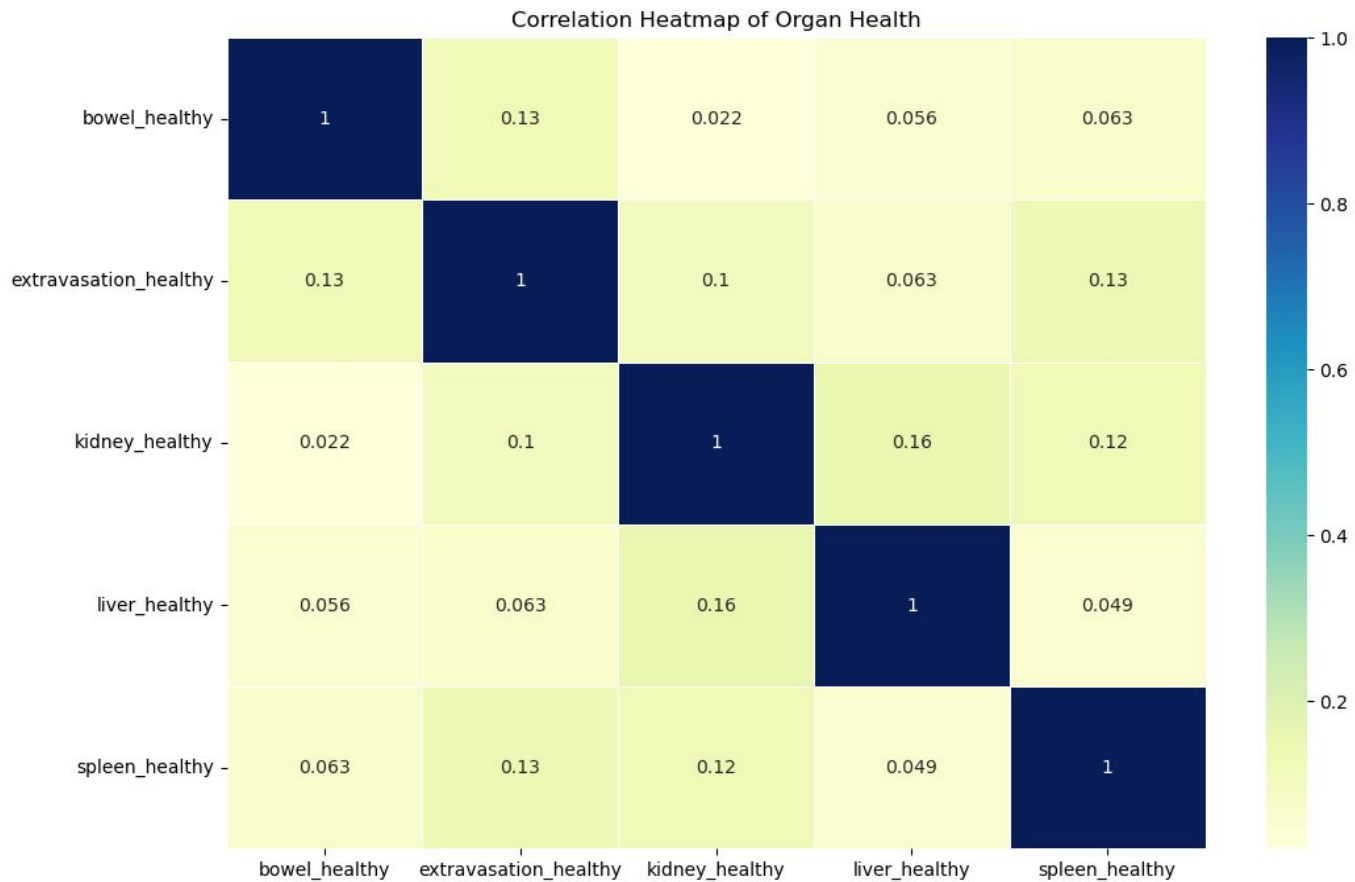
4711 Series



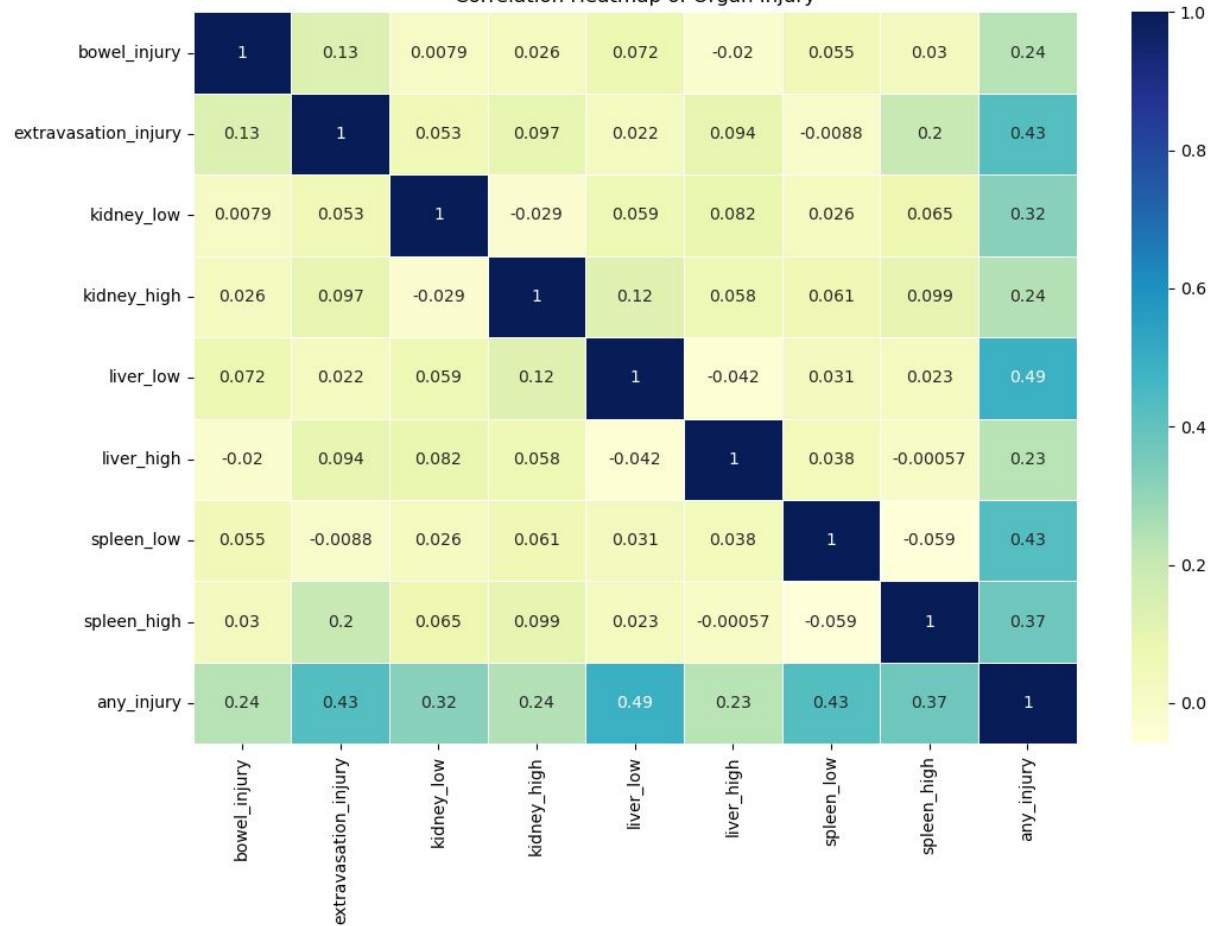
Distribution of Injuries







Correlation Heatmap of Organ Injury

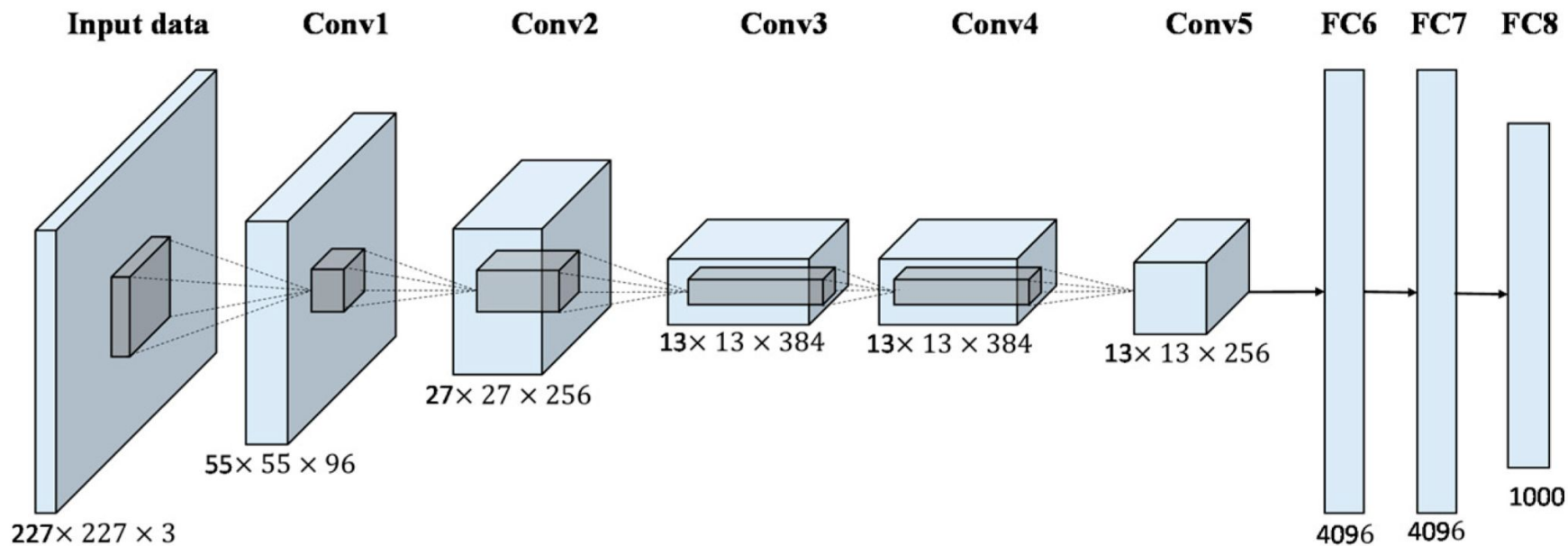


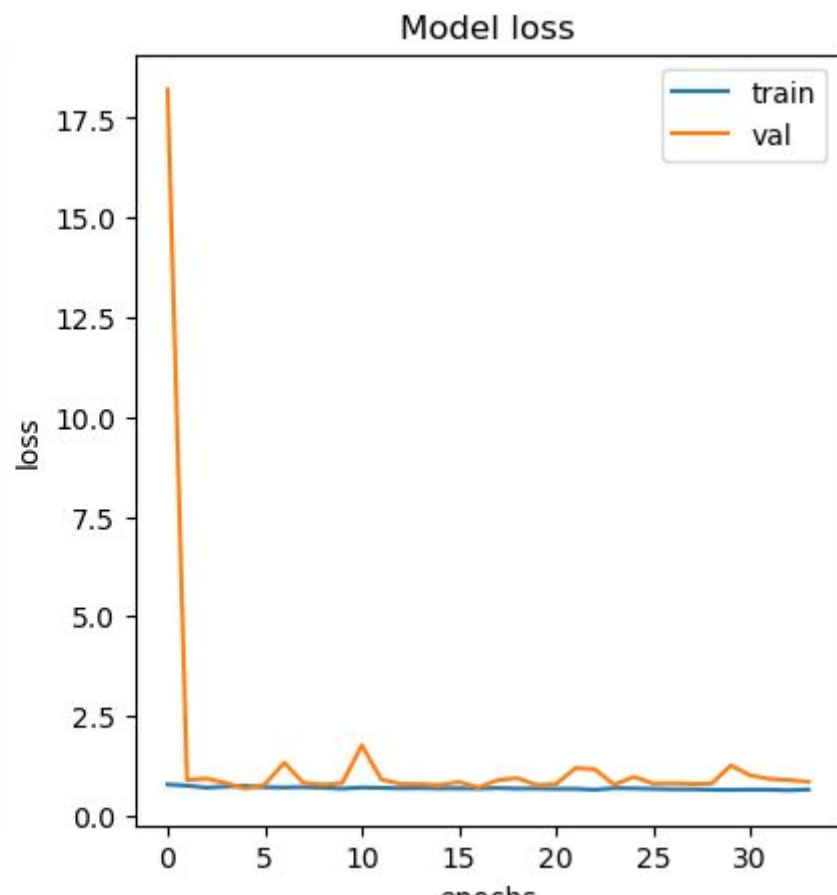
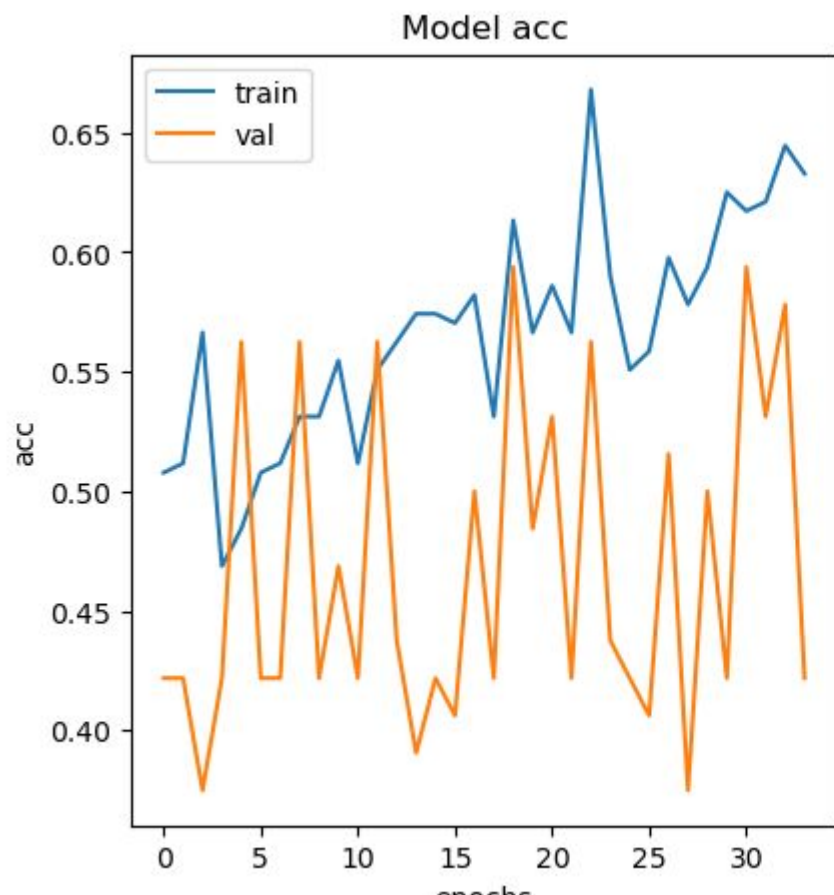
Data preparation

- Dicom Images -> png Image
- Png images -> resized 256 * 256
- Stack png Images -> 3D tensors 128*128*128



CNN ML Model





Next steps

1. Improving the Model
2. segmentation
3. Run model for other outcomes





Thank You