BOCQUIN Victor
BROSSEAU Alexandre
COGORDAN Alexandre

Fire Recognition System

INTRODUCTION

Why this subject and why it matters?

Avoid readmittance occurrences
Find the reasons behind them

INTRODUCTION

Diabetes

Chronic condition

Affects millions of people around the world

Characterized by high levels of glucose in the blood

Can lead to serious health complications if left untreated

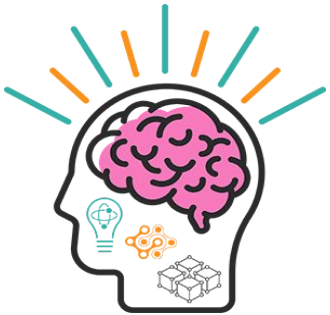
The problem

Reducing early hospital readmissions

Why ?

Improving the care and treatment of patients

Lack of manpower



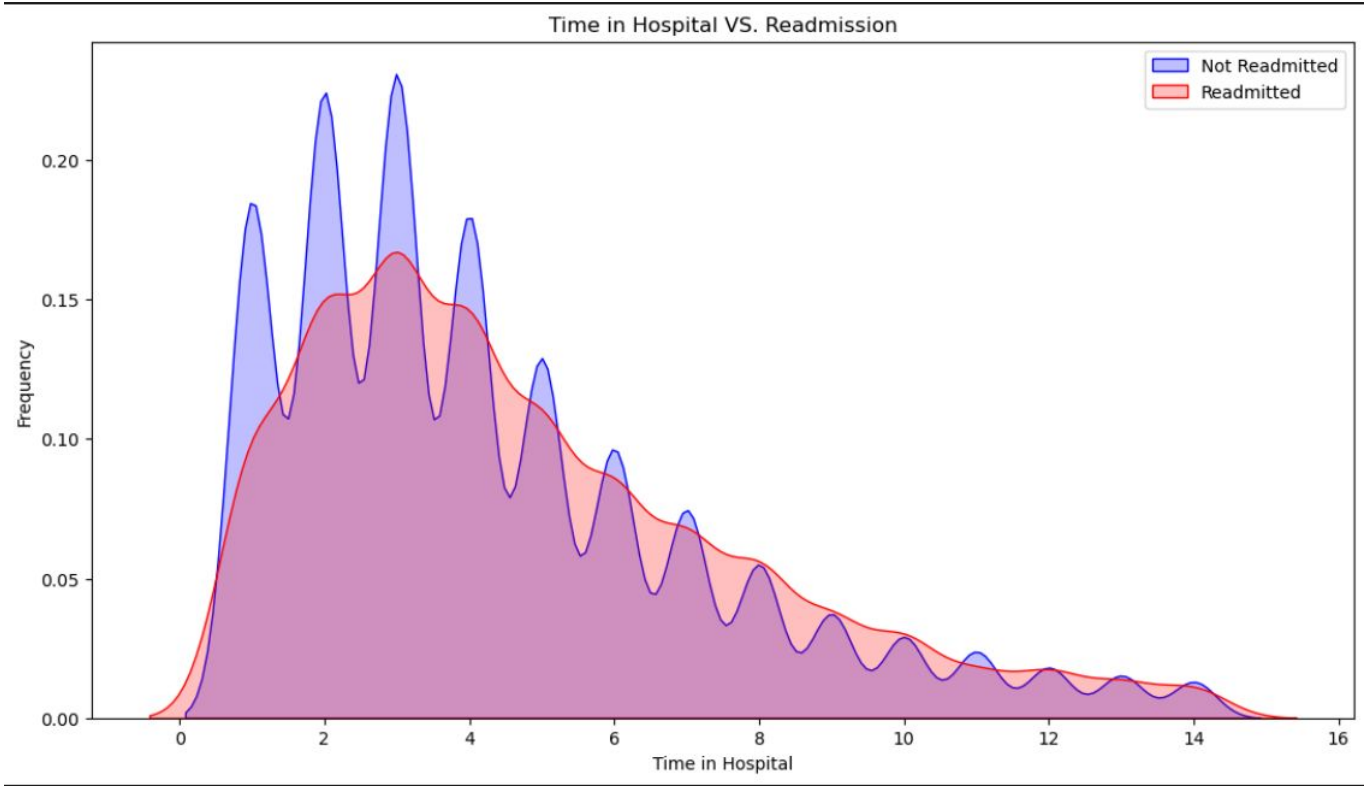
Act as a support for diagnoses

Reduces healthcare costs

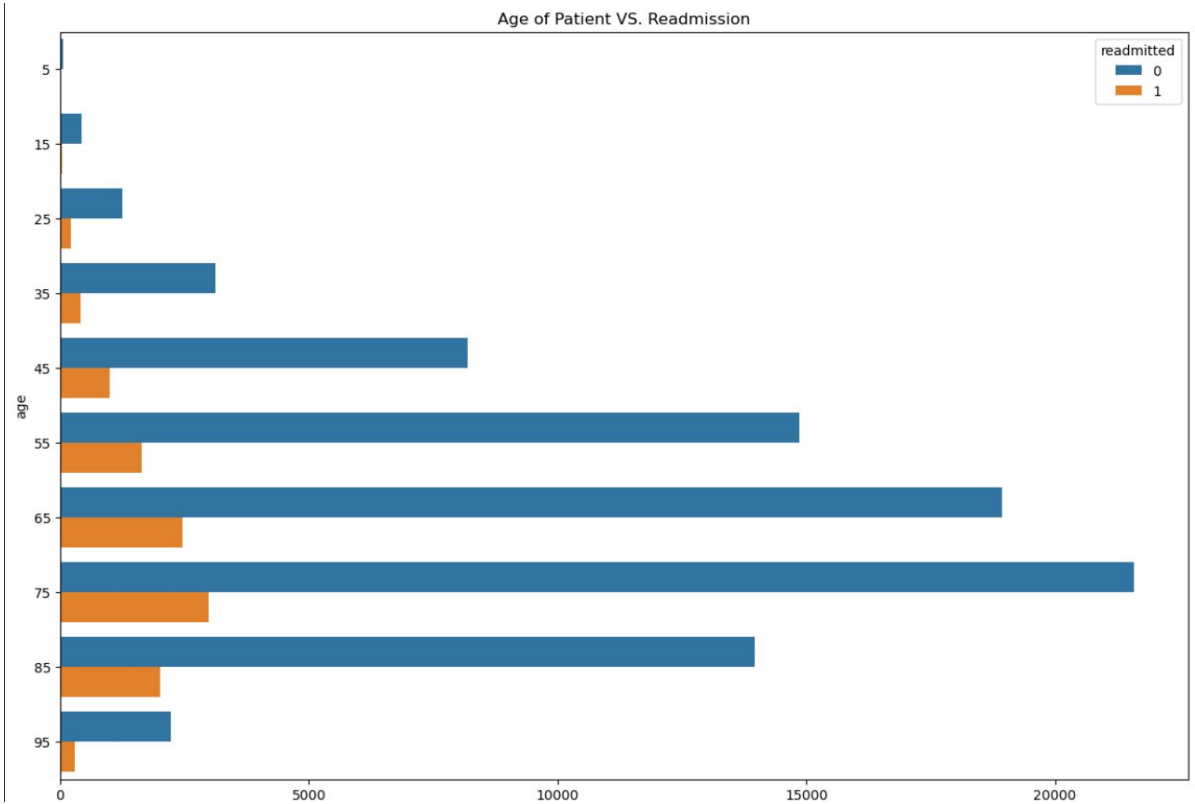
OUR SOURCES

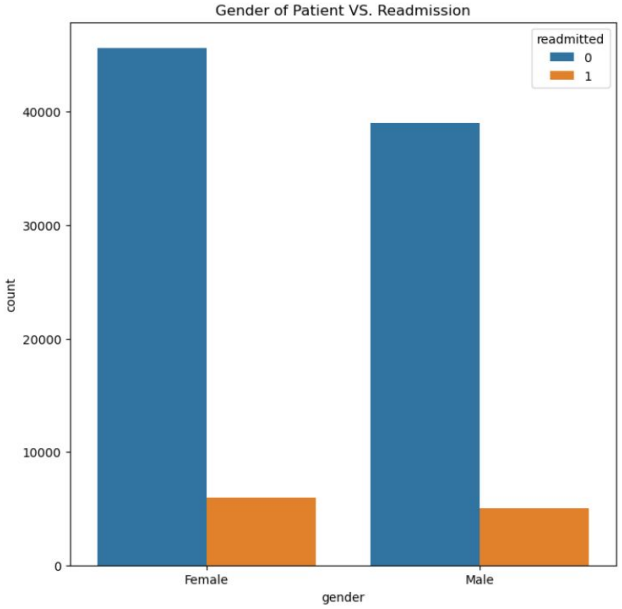
10 years (1999-2008)
130 hospitals
United States
50 features

The dataset analysis



The dataset analysis

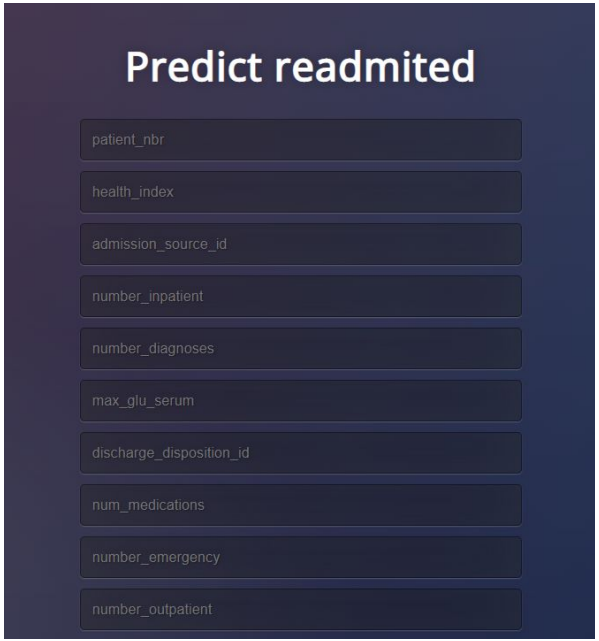


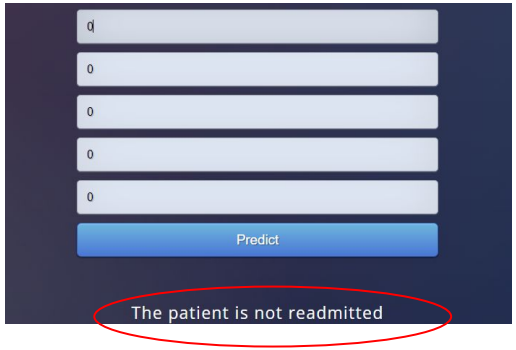


OUR SOLUTION

A model that predicts if the patient is readmitted

You can access our model via our API :





ANALYSIS

Model training

Models

SVC
Logistic Regression
GaussianNB
SGD Classifier
KNeighbors Classifier
Gradient Boosting Classifier
MultinomialNB
Random Forest

Principal libraries

Numpy
Matplotlib
Sklearn
Pandas
Seaborn
GridSearchCV

Feature selection

Faster and more accurate results

Created variables

Health index: number_emergency + number_inpatient + number_outpatient

Severity of disease: num_procedures + num_medications + num_lab_procedures + number_diagnoses

FOLLOWING MODEL

Comparison

Model	**SVC**	**Logistic Regression**	**GaussianNB**	**SGD Classifier**	**KNeighbors Classifier**	**Gradient Boosting Classifier**	**Multinomia INB**	**Random Forest**
Accuracy (%)	56	48	55	48	57	64	55	62

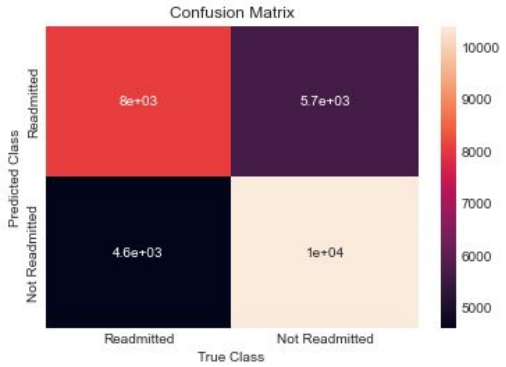
Optimal model

FINAL RESULTS

Test/Train split ratio: ***30%***

Following model: ***Gradient boosting classifier***

Accuracy: ***64%***



THANK YOU!