# Doctor Survey Prediction Report

## Introduction

The Doctor Survey Predictor is an AI/ML-powered web application designed to predict the optimal time to invite doctors to participate in surveys. The project leverages data analytics and machine learning techniques to ensure targeted email campaigns, improving efficiency and response rates.

## Objective

The primary goal of this project is to predict the best time to send a survey invitation to doctors based on past behavior patterns. By targeting doctors who are more likely to respond at specific times, this solution enhances survey participation rates.

## Technologies Used

- Python (for model training and web backend)
- Flask (web application framework)
- HTML, CSS, JavaScript (UI development)
- Bootstrap (UI styling)
- Pandas, NumPy, and Scikit-learn (data handling and model training)

## Dataset

The dataset includes various doctor attributes such as:

- NPI (Unique Doctor Identifier)
- Speciality
- Region
- Login Time, Logout Time
- Time Spent, Survey Attempts, etc.

The model predicts doctors most likely to respond based on these features.

## Model and Prediction Logic

The ML model is trained using a RandomForestClassifier with hyperparameter tuning to improve accuracy. Features such as login hour, logout hour, session duration, and active period were engineered for improved prediction performance.

## Web Application

The web interface allows users to input a desired time and returns predicted doctors in a CSV format. The UI includes:

- A quote display before prediction
- Pulse animation for results
- Heartbeat animation video in the background

## Conclusion

The Doctor Survey Predictor effectively predicts the best candidates for survey invitations, demonstrating improved accuracy and user experience. The intuitive interface and animation enhancements contribute to a polished final product.