Healthcare - Persistency of a Drug

Data Science project

16-Nov-2023

Team Details

Name: Noah Gallego Email: noahgallego394@gmail.com Country: United States College/Company: California State University Bakersfield Specialization: Data Science	Name: Tomisin Abimbola Adeniyi Email: tomisin_adeniyi11@yahoo.com Country: Nigeria College/Company: N/A Specialization: Data Science
Name: Mohammad Shehzar Khan Email: mshehzarkhan@gmail.com Country: Turkey College/Company: Koç University Specialization: Data Science	Name: Ashish Sasanapuri Email: sashrao21@gmail.com Country: India College/Company: N/A Specialization: Data Science

Problem Description

One challenge for all Pharmaceutical companies is to understand the persistence of a drug as per the physician's prescription. To solve this problem ABC Pharma company approached an analytics company to automate this process of identification.

Business Understanding

- Post the development of a machine learning model, we can study what factors make a patient non-compliant in adherence to their prescribed treatment.

- We can suggest solutions to ABC Pharma as to how persistency can improve based on the factors our ML model shows.

- Below are some assumptions that can be made based on understanding of the persistency of the drug-
  - Trying different method of drug intake or a change in the medications.
  - Understanding the effectiveness of the drug.
  - Change in the course of medication by increasing or decreasing the intake.

Project Lifecycle

1. Research/Study:
    a. Literature Review - Understand the problem statement, research different models used in this field

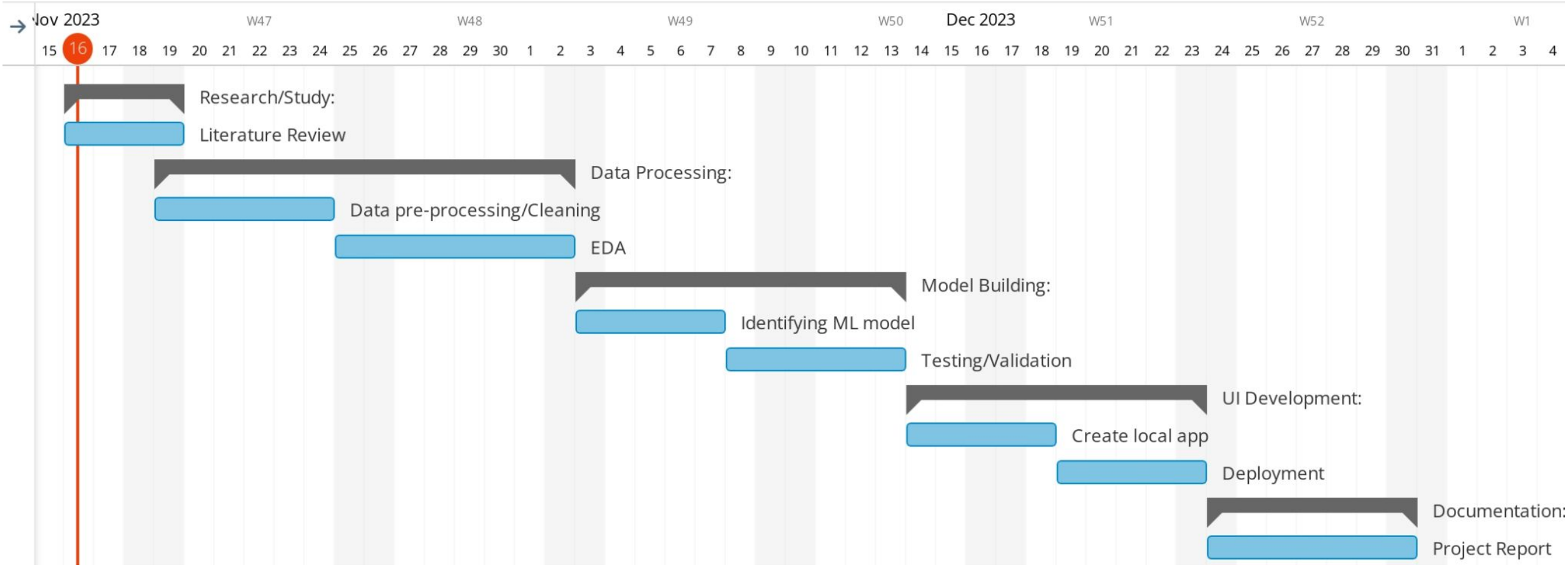
2. Data Processing:
    a. Data Pre-processing - Cleaning the dataset, handling missing values and outliers etc.
    b. EDA - Understanding the data, identifying relevant features, feature engineering

3. Model Building:
    a. ML model selection - Try different models such as linear model, ensemble models, and explore deep learning
    b. Testing/Validation - Fine tuning the model, Hyperparameter tuning, Optimizing the models via performance metrics

4. UI Development:
    a. Build local app - Build local application, containerize the app
    b. Deployment - Deploy the app on cloud

5. Documentation:
    a. Project Report - Document the project, create a Powerpoint Presentation

Gantt Chart


Nov 2023
W47
W48
W49
W50
Dec 2023
W51
W52
W1
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4
Research/Study:
Literature Review
Data Processing:
Data pre-processing/Cleaning
EDA
Model Building:
Identifying ML model
Testing/Validation
UI Development:
Create local app
Deployment
Documentation:
Project Report

Thank You

Your Deep Learning Partner