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

1. 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

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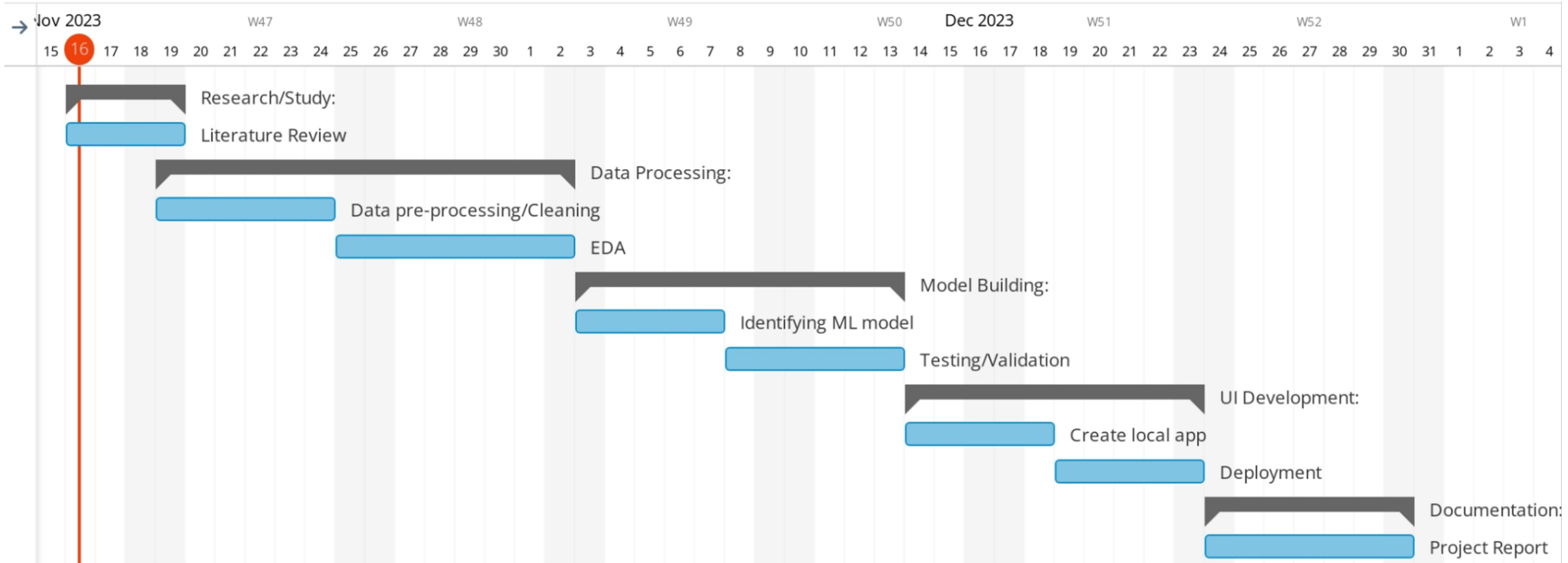   b. Testing/Validation - Fine tuning the model, Hyperparameter tuning, Optimizing the models via performance metrics

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

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

Gantt Chart

Thank You