**AI Health Challenge – ML RPA Use Case**

Objective:

The goal of this project is to create a patient risk classification tool that improves the diagnosis process by using Automation, Machine Learning (ML), and Artificial Intelligence (AI).

Process Overview:

This tool initiates it’s process with a doctor selecting an ailment, disorder, or other condition that they would like to investigate further based upon their information and knowledge of the patient. The bot navigates to a data source once the selection is made and proceeds to scrape the data (in this case Questionnaire Data from the National Health and Nutrition Examination Survey, a publicly available dataset sponsored by the CDC). A response variable, or chosen column from this dataset, gets isolated based on the doctor’s selection, and an elastic-net regression model identifies the variables that have the greatest predictive power for this response variable. Then, a logistic regression model is run to classify the general probability of a positive diagnosis based upon predominant features within the dataset. In our demo, the model will indicate the most important variables to the doctor, who then inputs the patients’ information/data that corresponds to these important features.

Once this new information is received from the patient, a ‘Prediction’ script is invoked, predicting the probability of a positive diagnosis. This risk probability for the new patient is compared to the general risk probability of the dataset, giving an accurate assessment of the risk of the patient having the condition. If the model believes this new patient is at an outsized risk, a ‘ChatGPT’ API call is invoked, which produces a structured report detailing the condition, possible treatments, and next steps for the provider to give to the patient at their discretion.