In my AI/ML project I chose the XGBoost ML model, the reasoning behind this choice is the xgboost library uses gradient boosting algorithms to create strong committees from a combination of weak classifiers. In the dataset that I was given there were a large number of weak classifiers such as Jitter % and Shimmer, in order to create powerful trends in data from these classifiers xgboost would prove to be the most effective method. I also chose XGBoost because it is a highly supported ML model in python making documentation on how to utilise this library easy to find which in turn helped me learn more, quicker. Once I developed my ML model with ~95% accuracy I wanted to put my own spin on detecting Parkinson’s so I used the UPDRS data which was given to predict Parkinson’s in a different way.

To predict Parkinson’s with the UPDRS data I determined it would be best to implement a sequential neural network, since we were working with largely positive floating-point numbers. I took the neural network approach as it seemed most suited to predicting Parkinson’s when working with a complex dataset. I chose a sequential model for my neural network as it was the most efficient way to pass the data among the layers. In my NN I used a tanh activation method because it modelled strongly positive numbers well and that was what I was working with in this dataset. I used sgd for the optimizer because I wanted to get the most accurate predictions without sacrificing a large amount of time per epoch. I also used mean squared error for my loss calculations, I used this because I was working with linear data.

I chose the Parkinson’s data set because I was intrigued by how ML can predict Parkinson’s disease in people without any medical help. I was fascinated by this because I knew how complex parkin sons is as a disease, it is hard to identify and impossible to cure, making it a very important disease which needs more research into in order to understand. I wanted to create an ML model which helps predict Parkinson’s with the hope that it would teach me more about Parkinson’s and how we can use ML to make more informed decisions for Parkinson’s patients.