**Autism Prediction**

**Problem Statement-** To predict the symptoms of autism based on the given questionnaire and then to confirm it using scans.

**Solution Flow-** The user will be presented with a questionnaire and based on his/her answer, the model will predict if the user has symptoms of Autism or not. If the prediction results suggest that the user may have autism, the user will be asked to provide a scan(he/she can upload the scan or can take a picture using the device). Using that image, the model will further confirm if the user has autism or not.

**Technologies Used-** Machine Learning, Deep Learning neural networks

**Proposed Methodology-** The inputs given by the user will be used in a Logistic Regression algorithm to predict if the user shows signs of Autism or not. After confirming that, the user will be asked to provide a scan. Using image processing techniques, the image will be sent to a trained neural network to identify if the user has Autism or not.

**Logistic Regression**- Logistic regression is a statistical model that in its basic form uses a logistic function to model a binary dependent variable, although many more complex extensions exist. In regression analysis, logistic regression (or logit regression) is estimating the parameters of a logistic model (a form of binary regression). Mathematically, a binary logistic model has a dependent variable with two possible values, such as pass/fail which is represented by an indicator variable, where the two values are labeled "0" and "1". In the logistic model, the log-odds (the logarithm of the odds) for the value labeled "1" is a linear combination of one or more independent variables ("predictors"); the independent variables can each be a binary variable (two classes, coded by an indicator variable) or a continuous variable (any real value).

**Neural Network-** Artificial neural networks (ANNs), usually simply called neural networks (NNs), are computing systems inspired by the biological neural networks that constitute animal brains.

An ANN is based on a collection of connected units or nodes called artificial neurons, which loosely model the neurons in a biological brain. Each connection, like the synapses in a biological brain, can transmit a signal to other neurons. An artificial neuron that receives a signal then processes it and can signal neurons connected to it. The "signal" at a connection is a real number, and the output of each neuron is computed by some non-linear function of the sum of its inputs.