Glaucoma Detection with Machine Learning

One of the chronic diseases is glaucoma which is often called “silent thief of sight” as it has no symptoms and if not detected at an early stage it may cause permanent blindness in future. Glaucoma proceeds with some structural changes in the retina which aid ophthalmologists to detect glaucoma at an early stage and stop its progression. Hence our main aim is to detect and predict that glaucoma disease in advance using machine learning. Glaucoma is detected by cup to disc ratio of a retina of a person. If the ratio is greater than 0.7 value then it is confirmed that the person is affected by glaucoma. Hence I have analyzed a dataset of 250 persons and trained the machine with three sets of train and test dataset. In first set, I trained 50% of dataset and 50% for test dataset and I analyzed the accuracy. Then in second set, I Trained 60% of dataset and used 40% for test dataset. Finally in third dataset I trained 80% of dataset and used 20% for test dataset. In all these analysation I could find more accuracy in third set of data prediction as we are training more number of datasets. And also I analyzed the dataset with five different types of algorithm. AS there is only two kind of possibilities (i.e. either a person affected by Glaucoma or a normal person), I could find cent percent accuracy in DecisionTree and LogisticRegression algorithm.