*In this proposed model all CNN ’s were trained with the Adam optimizer and sparse categorical cross entropy loss function*

*Adam optimizer works well in practice and compares favorably to other adaptive optimizer*

*The initial CNN was trained for 100 epochs. Early stopping was*

*also in place to stop training if the validation accuracy did not improve in 50 epochs in order to stop.*

*Transfer Learning:*

*Three TL approaches were used with the proposed model to improve the accuracy of the model.*

*The aim of transfer learning is to improve classification accuracy of the model*

*Transfer Learning Method 1*

*To make very small changes to something in order to make it work as well as possible*

*The first TL method freezes the whole base model and then unfreezes the first two convolutional layers to be retrained on the new data.*

*Frozen means keeping the weights of certain layers constant without updating them during training.*

*Transfer Learning Method 2*

*The second TL method freezes the whole base model and then unfreezes the last two convolutional layers to be retrained on the new subject’s data*

*Transfer Learning Method 3*

*The third TL method uses a combination of both previous methods to unfreeze all of the convolutional layers to retrain on new subject data.*

*Adam optimizer : RMS prop and momentum*