**ABSTRACT**

In recent times, brain tumors are consider the most threatening disease for humanhealth and life. The mortality rate of brain tumor amongst all cancerous diseases are 7%, which is quite high. The medical image analysis becomes more challenging due to complex architecture of the numerous brain tumors; which are irregular in shape and size. Their overlapping tissues with healthy brain tissues further makes it extremely difficult to identify their presence. Similarly determining their type and size further expedite the complexity of analysis procedure. Traditional machines learning methods involving human intervention are not adequately producing the optimal results, time consuming and rely on human experts. Deep learning models provide fully automated models and overcomes the limitation of traditional procedure. Deep learning models provide adequate mechanism to identify tumor, its type and size adequately. Our proposed R-CNN along with the transfer learning mechanism between Random Forest and Support Vector Machine (SVM) yields competitive results. The experiment is performed over MRI modalities using python open cv libraries. The entire code is available at <http://github.com/tirmzi/RCNN_TL_RF-SVM>.Deep learning fully automated analysis provide adequate and timely statistics about tumor, that helps medical expert to timely initiate the adequate treatment, which is a significant towards saving human life.