

Convolutional Neural Network based Brain Tumor Detection

Shruti Karmarkar^{1*}, Preeti Karmarkar¹, Shruti Bagesar¹, Kalyani Chahare¹, Nitin Janwe¹

Department of Computer Science and Engineering¹

Rajiv Gandhi College of Engineering, Research & Technology, Chandrapur, Maharashtra, India.

* Corresponding author E-mail: shrutikarmarkar06@gmail.com

Abstract: *Our objective towards working on this project was to train a deep learning model that would be able to accurately predict the presence of tumor in a human brain by examining the MRI images of a person using a Convolutional Neural Network. In our quest for achieving the highest accuracy in our project, we employed a multi-faceted approach to network selection. We began by developing our own CNN architecture with four convolutional layers, which delivered a promising accuracy of 97%. However, to further improve our results, we delved into the realm of transfer learning and explored pre-trained models like Inception, ResNet, VGG16, and VGG19. After rigorous evaluation, we found that combining VGG16 with our novel architecture yielded the most remarkable outcomes. This fusion of VGG16's advanced feature extraction capabilities with our tailored architecture allowed us to achieve the highest accuracy of 99.17% for our specific dataset. This network selection process exemplifies our commitment to maximizing performance and showcasing the power of combining state-of-the-art models with innovative architectural designs*

Keywords: Tumor

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