Brain Tumor Detection Using Convolutional Neural Network

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*Abstract*—One of the most significant and difficult issues in medical image processing is brain tumor segmentation (BTS) as human classification might cause improper diagnosis and prognosis. Furthermore, when a lot of data needs to be contributed it is an annoying task. It becomes challenging to identify tumor regions in images as brain tumors (BT) exhibit a great level of visual variation as well as mimic healthy tissues. Using the fuzzy C-Means clustering (FCM) approach, we proposed in the current work to exclude brain cancers from the two dimensional MRI. Next came convolutional neural networks (CNNs) and traditional classifiers. Utilizing a real- time dataset which had a diversity of tumor locations, sizes, shapes, image intensities, this experimental study was carried out. Next, we discussed CNNs, which are built with Keras and Tensorflow since they outperform the conventional ones. In this investigation, CNN attained an amazing accuracy rate that is 87.87%. This study's primary objective is to make the differentiation between normal and aberrant pixels utilizing statistical along with texture-based criteria

Keywords— *CNN, Medical Image, FCM, SVM, segmentation*

Introduction (*Heading 1*)

A range of non-invasive approaches for looking within the body are called as "medical imaging" [1]. Several image modalities along with procedures are employed in medical imaging to see human body for the diagnostic along with therapeutic purposes. Therefore, it has been essential and required while enhancing individual’s health.products, and (3) conformity of style throughout a conference proceedings. Margins, column widths, line spacing, and type styles are built-in; examples of the type styles are provided throughout this document and are identified in italic type, within parentheses, following the example. Some components, such as multi-leveled equations, graphics, and tables are not prescribed, although the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.

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*a**b* 

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## Some Common Mistakes

* The word “data” is plural, not singular.
* The subscript for the permeability of vacuum **0, and other common scientific constants, is zero with subscript formatting, not a lowercase letter “o”.
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* There is no period after the “et” in the Latin abbreviation “et al.”.
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1. Table Type Styles

| Table Head | Table Column Head | | |
| --- | --- | --- | --- |
| Table column subhead | Subhead | Subhead |
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The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g”. Avoid the stilted expression “one of us (R. B. G.) thanks ...”. Instead, try “R. B. G. thanks...”. Put sponsor acknowledgments in the unnumbered footnote on the first page.

##### References

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