



Brain Tumor Identification and Classification

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Introduction

1

The brain is a key organ responsible for the central nervous system. The human brain complements the central nervous system by connecting the bone marrow. The brain has the responsibility of controlling the actions of the human body.

2

It receives the information from a different sense and after making decisions, sends the instructions to the body

3

Malignant and benign are the currently prevalent types of significant brain tumors. The brain tumor is considered deadly cancer in adults and children.

4

A benign tumor is the least damaging type of tumor and has no tumor cells. Malicious cancer is tumor cells that can be very deadly and deliberate to be deadly. A malignant tumor can affect the entire brain

5

Quick and timely recognition of a brain tumor is of the utmost importance for curing the tumor. It depends on the expertise and professional skills of the doctor and which method is selected to treat the patient for rapid recovery. It is challenging to determine the correct type of brain tumor in the initial phase.

6

Deep learning replicates the brain in data processing, pattern recognition, and decision-making development. Deep neural networks have the competency of unsupervised learning from unstructured data. Convolutional Neural Network (CNN) works exceptionally well in deep learning

Problem Statement

Recognition of automated brain tumor in Magnetic resonance imaging (MRI) is a difficult task due to complexity of size and location variability. In this research statistical analysis morphological and thresholding techniques are proposed to process the images obtained by MRI for Tumor Detection from Brain MRI Images.

Feed-forward backprop neural network will be used to classify the performance of tumors part of the image.

The results produced by this approach will increase the accuracy and reduce the number of iterations.



Features

TYPES OF BRAIN TUMOR

First Image is the example of non-meningioma benign.

Second image is the example of malignant meningioma brain.

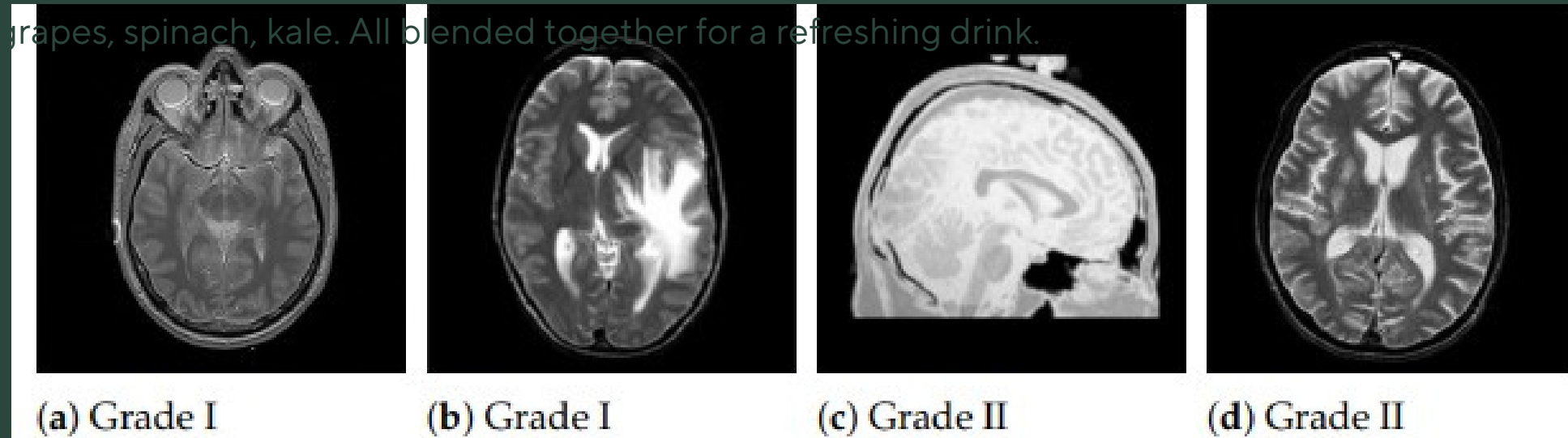


Figure 2. Examples of non-meningioma benign brain images.

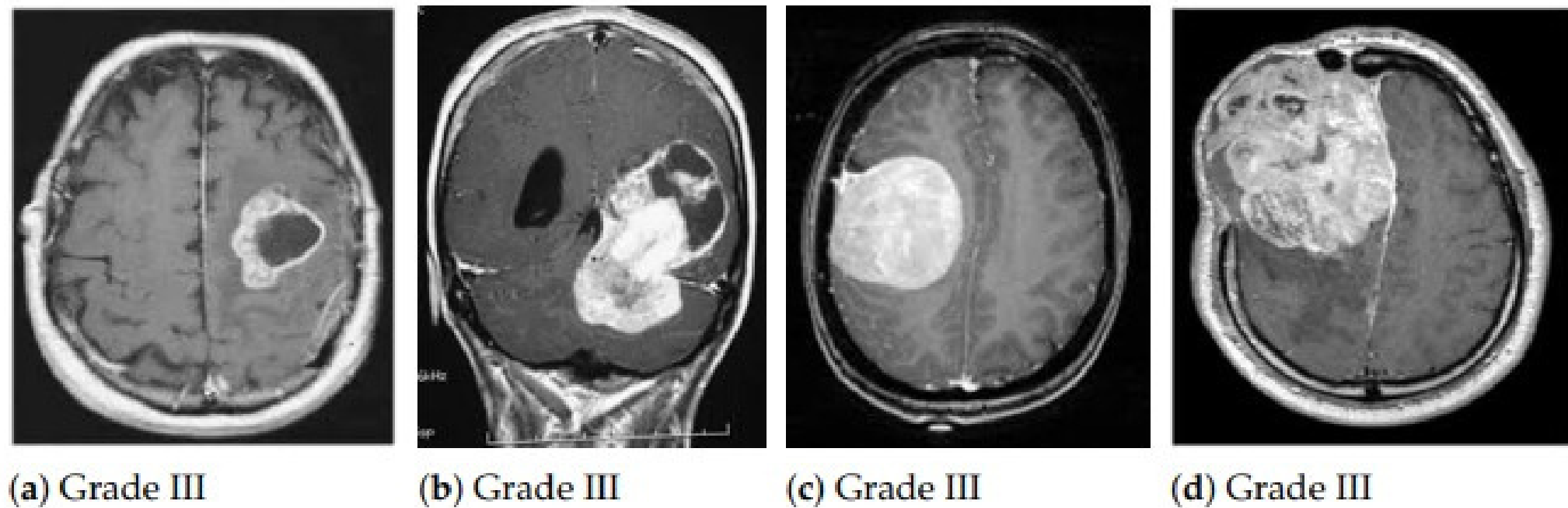
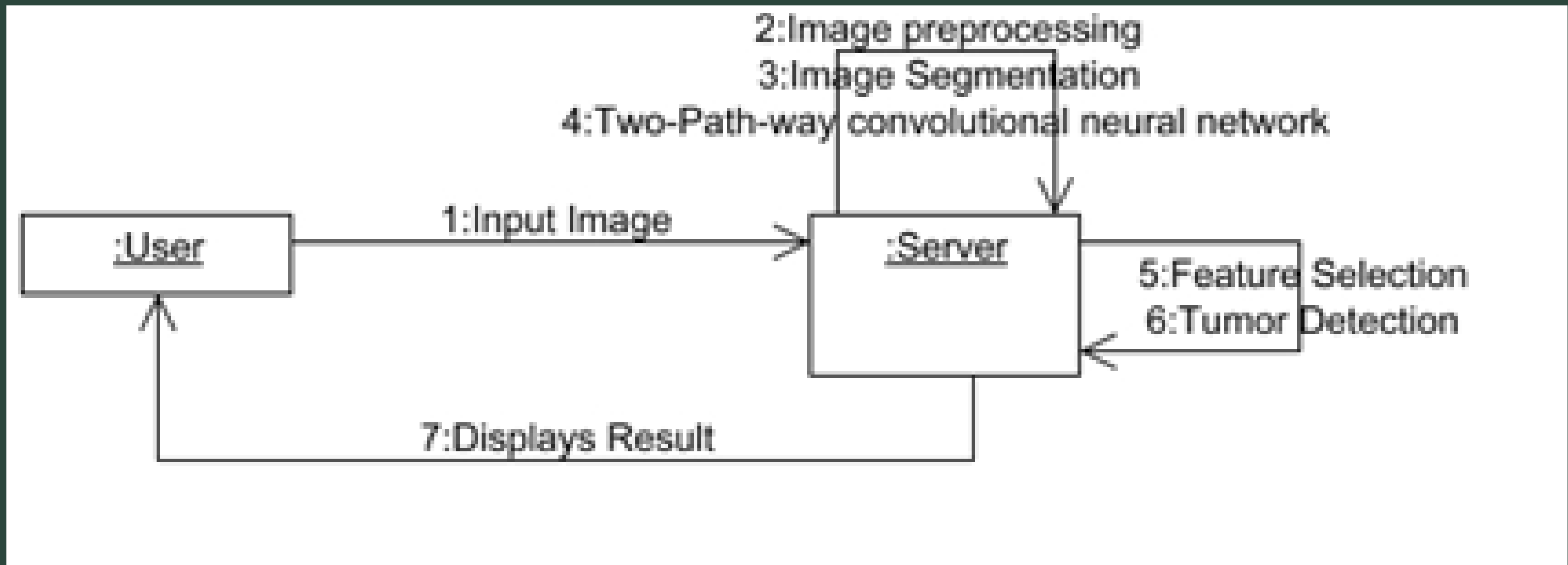
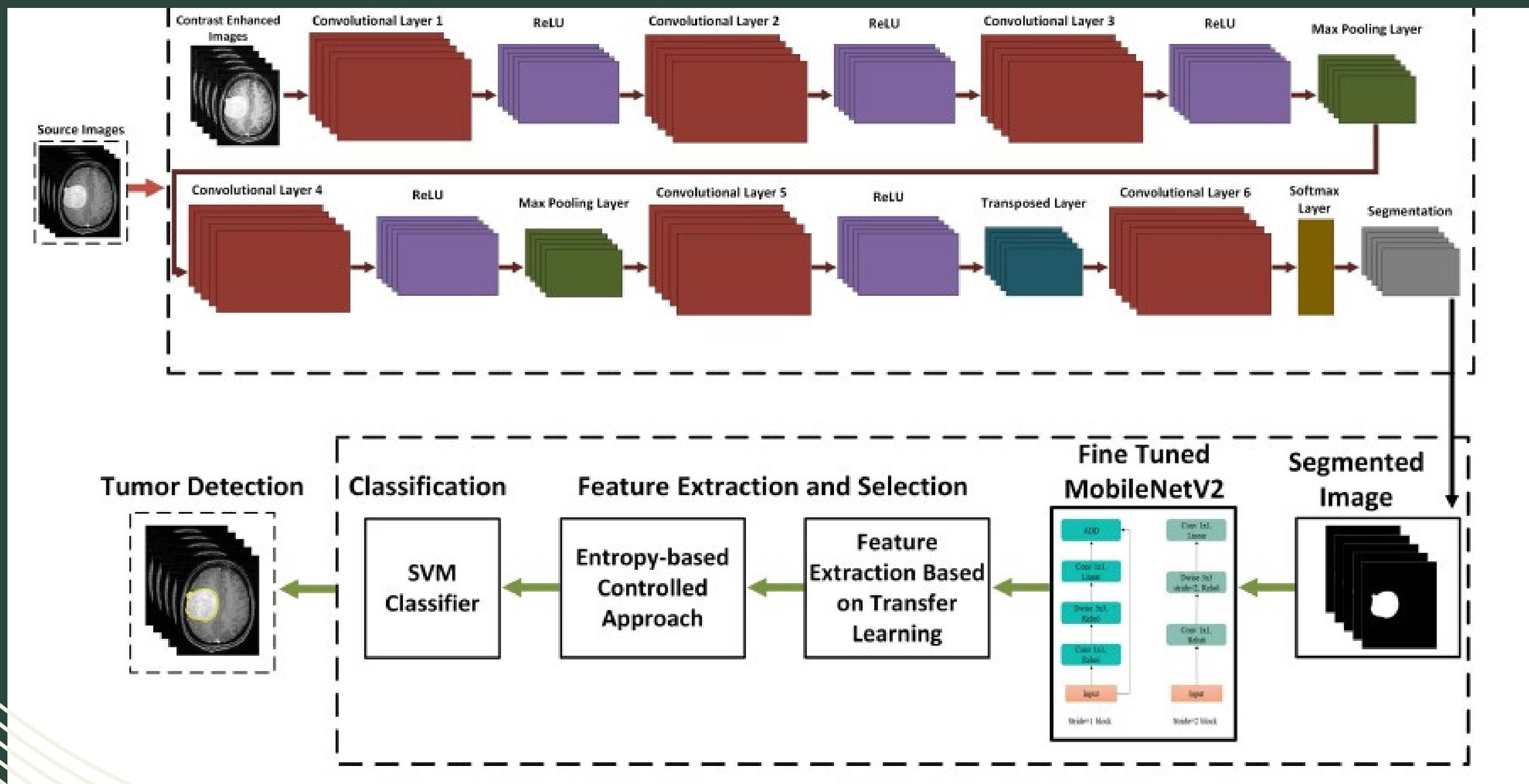


Figure 3. Examples of malignant meningioma brain images.

Features



Features



Tools and Technologies


Deep Learning Techniques

**Convolutional Neural Networks
(CNN)**

Python
TensorFlow
Keras
Numpy
Scikit-learn
Matplotlib
OpenCV



Motivation

- >Accurate and sharp determining of Brain Tuberculosis
 - >Doctors become helpful with accuracy
 - >It learns from past record which make it more accommodate result.
 - >The accuracy and the robustness of brain tumor segmentation
- 

Requirements

HARDWARE AND SOFTWARE SPECIFICATION

1.5.1 Hardware Requirements

Processor : I3 and Above

RAM : 4GB and Above

Hard Disk : 500GB and Above

1.5.2 Software Requirements

Operating System : Windows 7 , 8, 10 (64 bit)

Tools : Anaconda (Jupyter Note Book IDE)

REFERENCES

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