BRAIN TUMOUR DETECTOR

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INTRODUCTION

The main part in human nervous system is human brain. It is located in human head and it is covered by the skull. Brain tumours are a heterogeneous group of central nervous system neoplasms that arise within or adjacent to the brain. At present, brain tumours are detected by imaging only after the onset of neurological symtoms. No early detection strategies are in use even in individuals known to be at risk for specific types of brain tumours by virtue of their genetic makeup.

Imaging tests like MRI scan can help doctors find out if the tumour is a primary brain tumour or if it is cancer that has spread to the brain from elsewhere in the body. Imaging tests show pictures of the inside of the body.

PROBLEM STATEMENT:

The objective of the project is to develop a system for quick, automated and accurate diagnosis of brain tumours with the help of MRI scan images.

PROBLEMS WITH EXISTING SYSTEM:

- 1. Intra-Class Variation
- 2. Scale Variation`
- 3. View-Point Variation
- 4. Occlusion
- 5. Illumination
- 6. Background Clutter

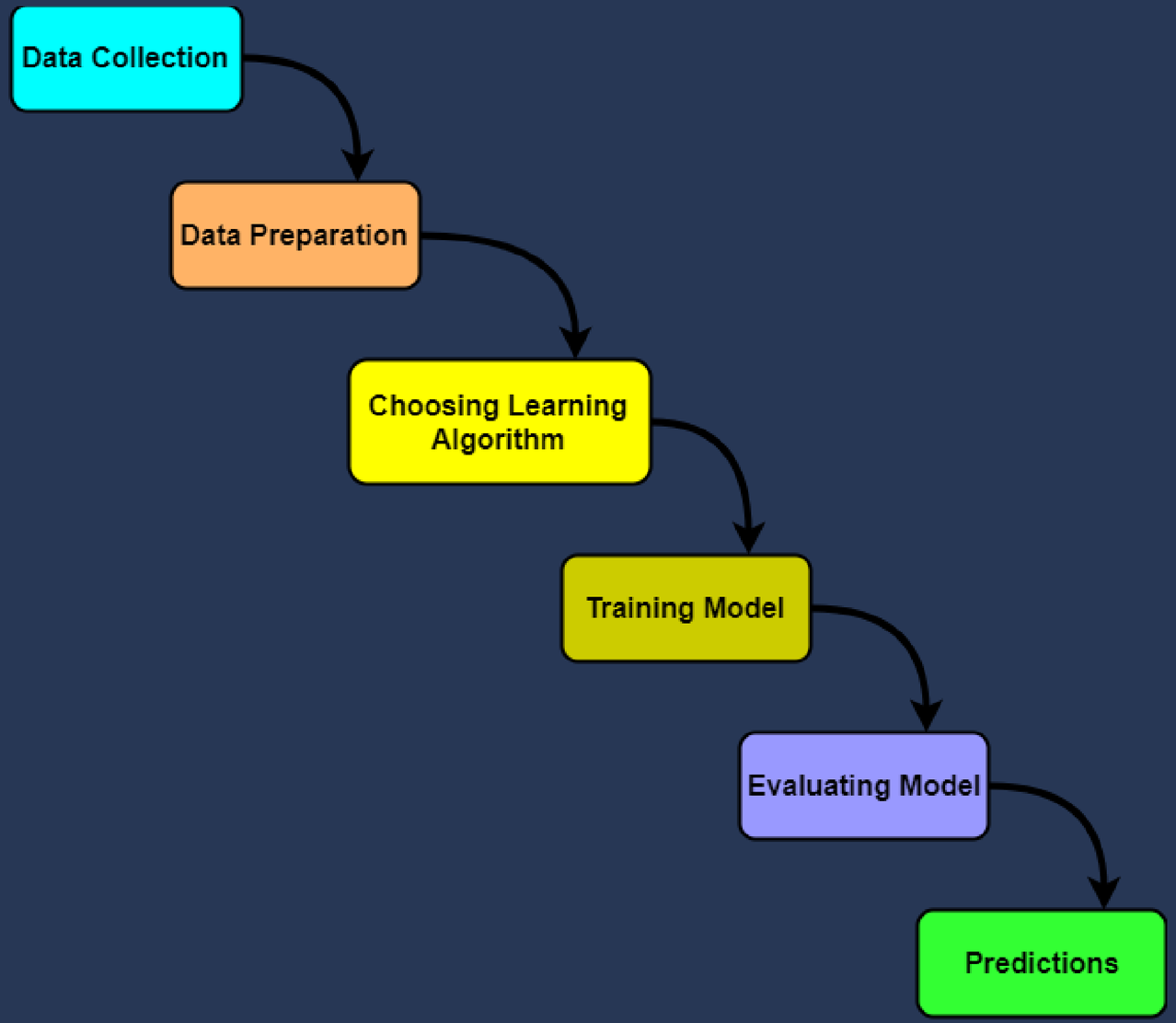
PROPOSED SYSTEM:

The proposed system uses Convolution Neural Network(CNN) which is used in image classification and recognition because of its high accuracy. The CNN follows a hierarchical model which works on building a network, like a funnel, and finally gives out a fully-connected layer where all the neurons are connected to each other and the output is processed. Data augmentation in preprocessing also increases accuracy by creating more training samples of the sample images.

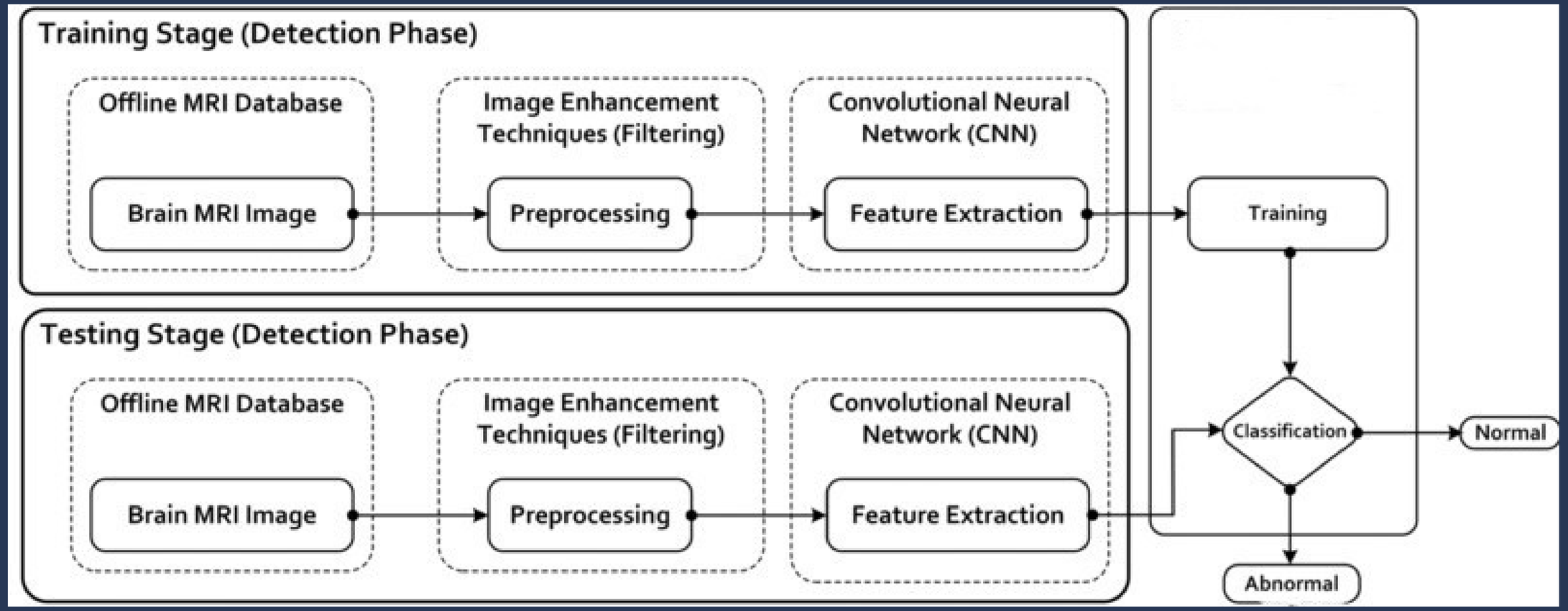
SOFTWARES USED

- PYTHON
- JUPYTER NOTEBOOK
- REACTJS FOR DEPLOYMENT

Steps used in building the system:

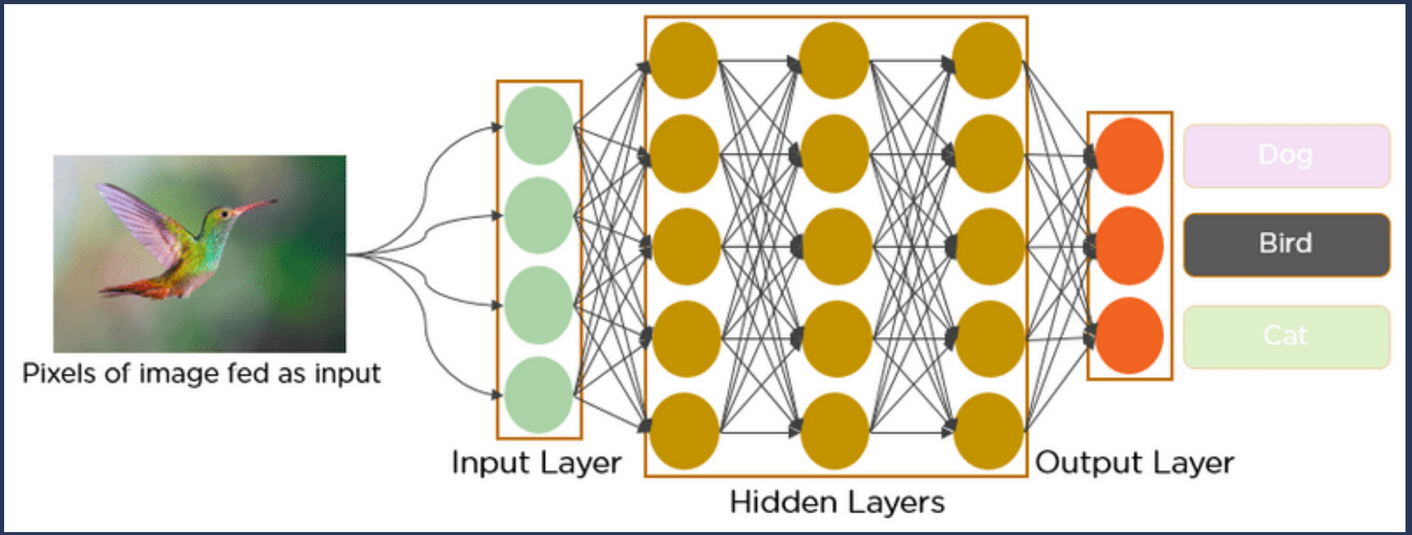


Flowchart of Brain Tumour detection with CNN:



What is CNN?

A convolutional neural network (CNN) is a type of artificial neural network used in image recognition and processing that is specifically designed to process pixel data. CNNs are powerful image processing, artificial intelligence (AI) that use deep learning to perform both generative and descriptive tasks, often using machine vison that includes image and video recognition



SYSTEM REQUIREMENTS:

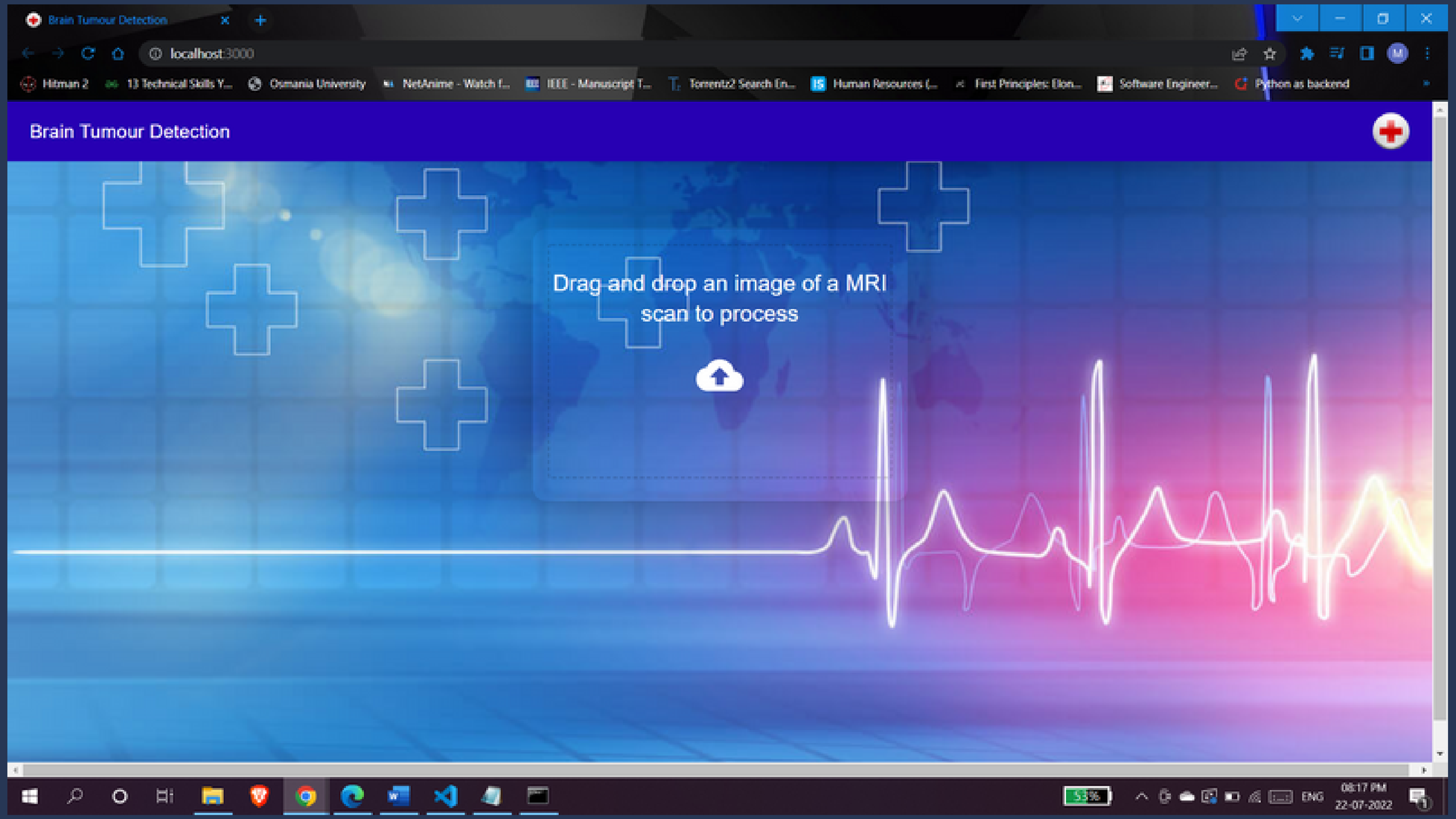
Hardware:

RAM: 1GB+
Processor: i5 or above
Memory: 2GB+

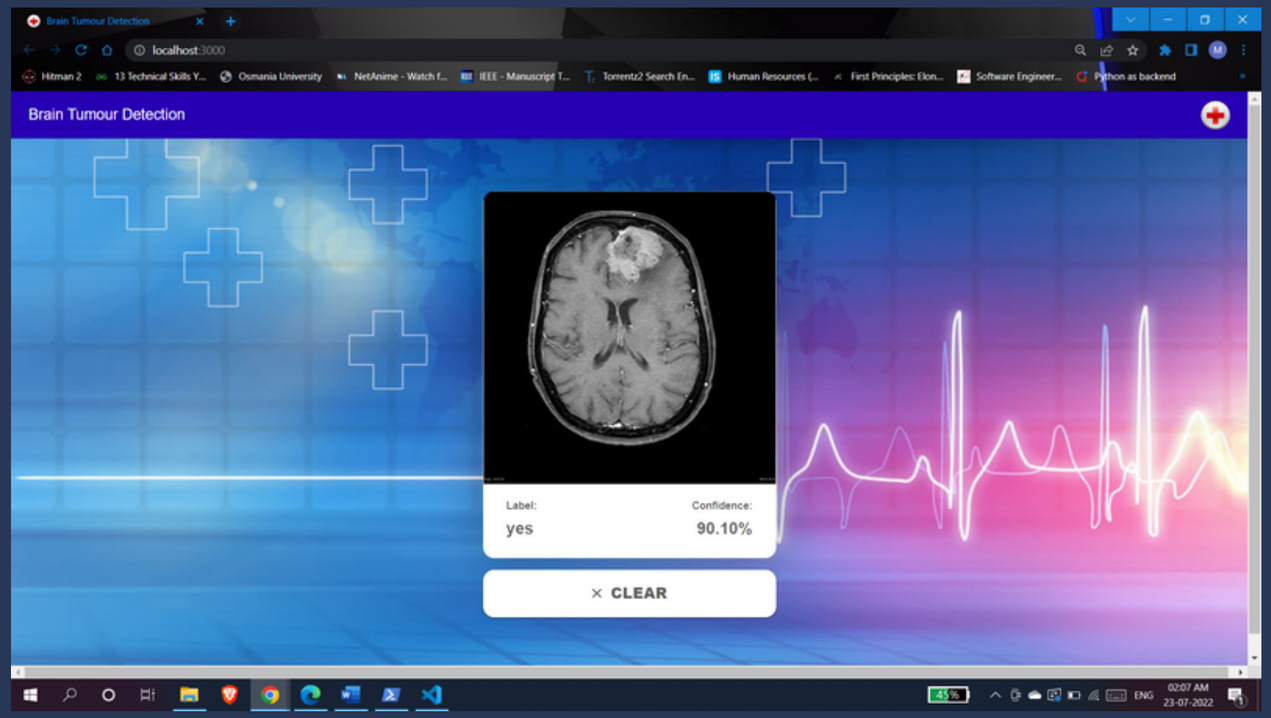
Software:

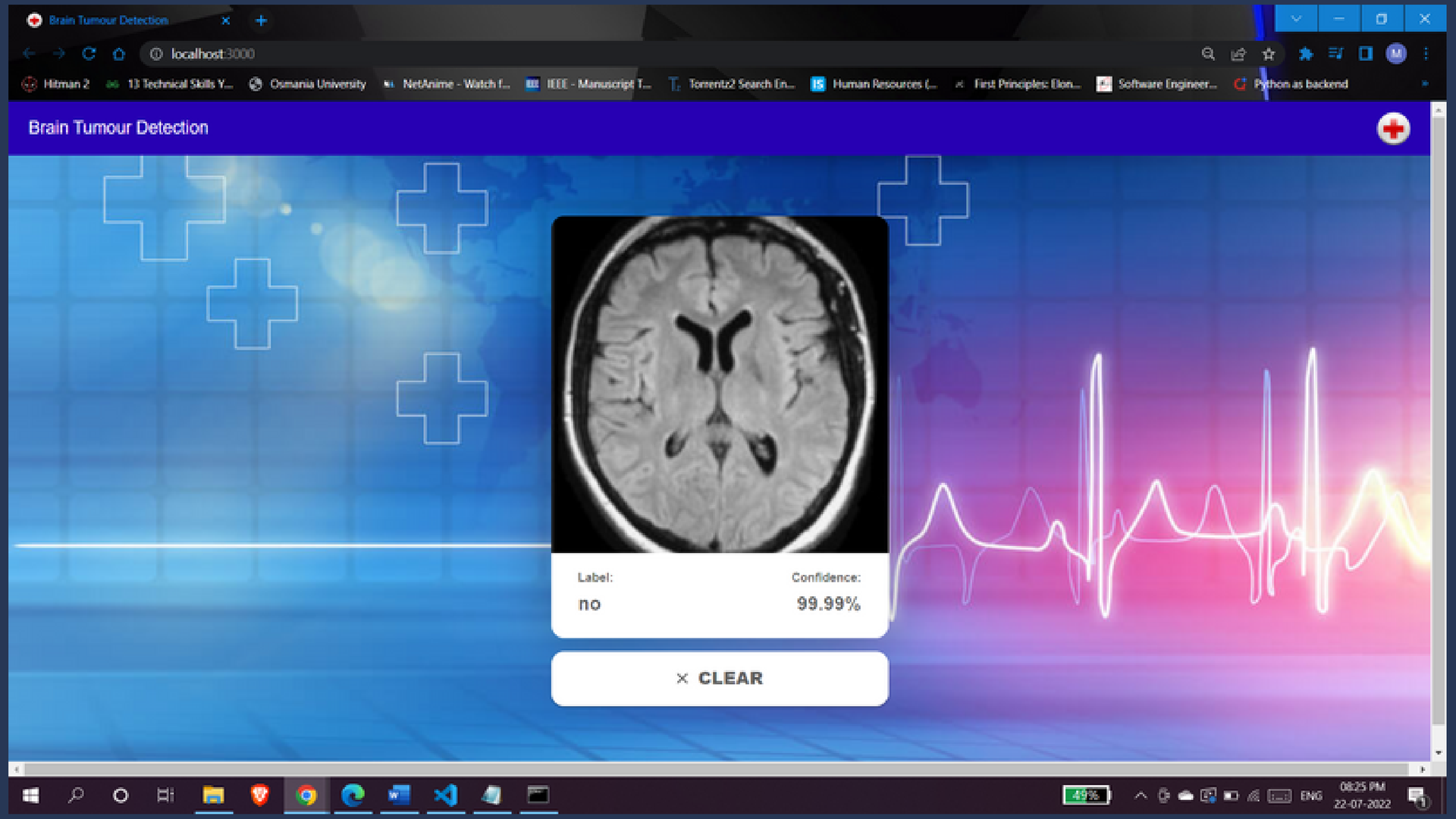
Python 3
Windows 8 or above
ReactJS
Juoyter Notebook IDE

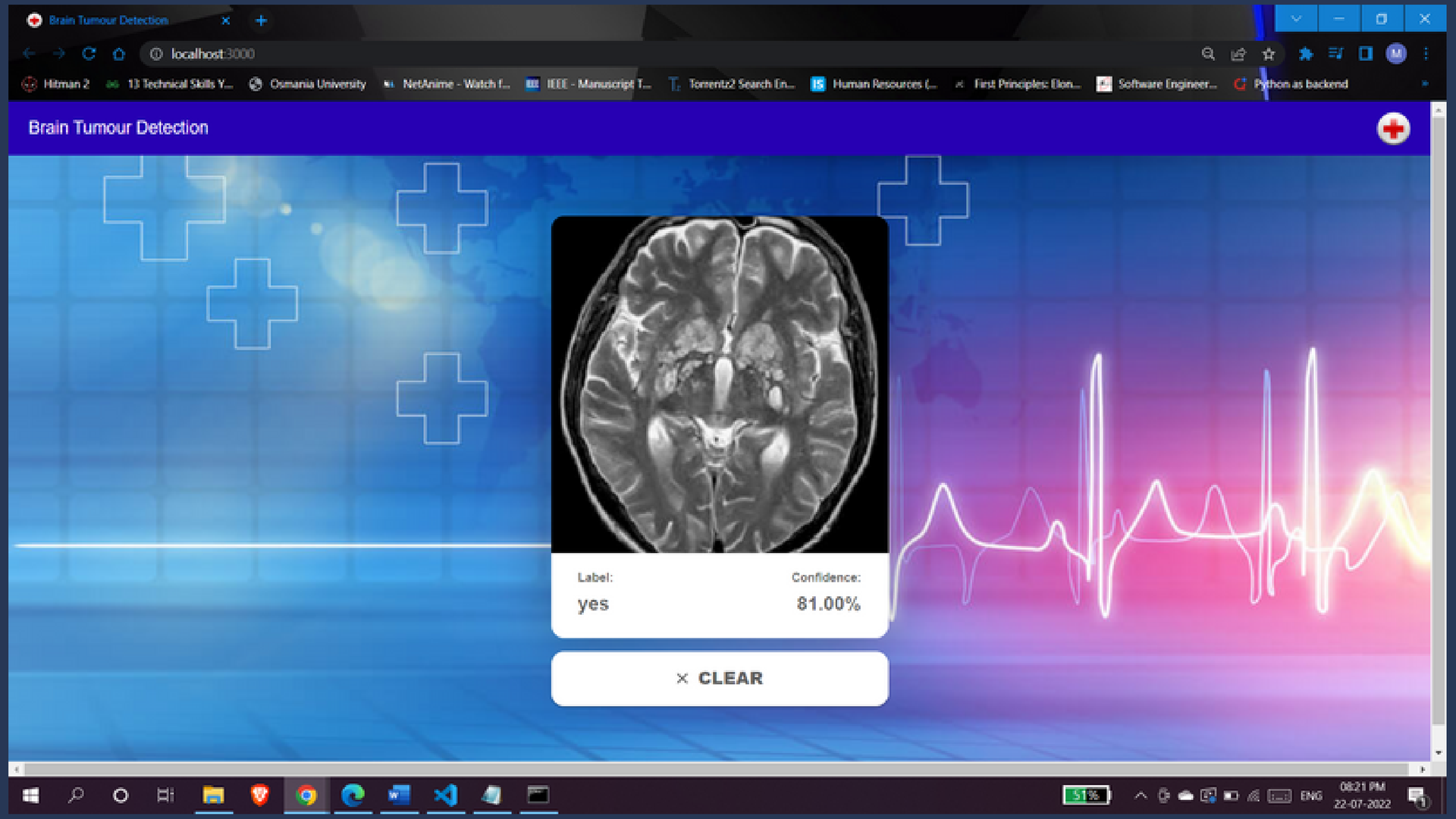
THE DEVEOPED SYSTEM INTERFACE:



PREDICTIONS:




Brain Tumour Detection
localhost:3000
Brain Tumour Detection
Label:
no
Confidence:
99.99%
CLEAR


Brain Tumour Detection
localhost:3000
Brain Tumour Detection
Label:
yes
Confidence:
81.00%
CLEAR

THANK YOU