DeepBrainDetect: A YOLOv8-Powered Framework for Enhanced Brain Tumor Detection

A Project Report Submitted by

WISDOM GOODLIVE OHA – 92100151053

ONYIRIUKA FAITHFULKELECHUKWU – 92100151016

BELLO ETIENNE KHOLIA – 92100151028

in partial fulfilment for the award of the degree of

Bachelor of Technology

in

Computer Engineering – AI

Faculty of Engineering & Technology

Marwadi University, Rajkot

April 2025

Faculty of Technology

Marwadi University

Computer Engineering – AI department

2024-2025

CERTIFICATE

This is to certify that the project entitled **DeepBrainDetect: A Yolov8-Powered Framework for Enhanced Brain Tumor Detection** has been carried out by **WISDOM GOODLIVE OHA - 92100151053** under my guidance in partial fulfilment of the degree of Bachelor of Technology in Computer Engineering of Marwadi University, Rajkot during the academic year 2024-2025.

Date: 26/04/2025

Internal Guide

Prof. Hitesh Kag

Assistant Professor

Professor & Head of the Department

Prof.(Dr.)Madhu Shukla

Faculty of Technology

Marwadi University

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Acknowledgments

We would like to extend our sincere gratitude to **Prof. Hitesh Kag,** our internal supervisor who has contributed to the successful completion of this project. Your unwavering support, guidance, and assistance have been invaluable throughout this endeavor. First and foremost, we would like to express our deep appreciation to **Marwadi University** for providing us with conducive research and learning environment. Your commitment to academic excellence has been a constant source of inspiration.

Our heartfelt thanks go to **Dr. Madhu Shukla**, whose visionary leadership has not only guided the department but also provided us with the opportunity to explore our research interests. Your mentorship has played a pivotal role in our growth. We are immensely grateful to our External guide, **Prof. Premavathi T.**, whose expertise and guidance have shaped our understanding of the subject matter. Your patience and unwavering support in overcoming challenges have been instrumental.

Our sincere appreciation extends to the esteemed **Faculty members at Computer Engineering – Artificial Intelligence**, who have generously shared their knowledge and experiences, expanded our horizons and fostered our spirit of inquiry. To our fellow classmates, your camaraderie and collaborative efforts have made this academic journey all the more enriching. We offer our gratitude for your companionship. Lastly, we would like to express our thanks to our friends for their constant support and understanding. Your presence during both the highs and lows has provided us with strength. This project represents a collective effort, and we are profoundly thankful to all who have played a role in its completion.

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Institute's Vision and Mission

Institute's Vision

Our vision is to address challenges facing our society and planet through sterile education that builds capacity of our students and empower them through their innovative thinking practice and character building that will ultimately manifest to boost creativity and responsibility utilizing the limited natural resources to meet the challenges of the 21st century.

Institute's Mission

- To Produce creative, responsible and informed professionals
- To produce individuals who are digital-age literates, inventive thinkers, effective communicators and highly productive.
- To deliver cost-effective quality education
- To offer world-class, cross-disciplinary education in strategic sectors of economy though well devised and synchronized delivery structure and system, designed to tackle the creative intelligence and enhance the productivity of individuals.
- To provide a conducive environment that enables and promotes individuals to creatively interact, coordinate, disseminate and examine change, opinion as well as concept that will enable students to experience higher level of learning acquired through ceaseless effort that led to the development of character, confidence, values and technical skills.

Department's Vision and Mission

Department's Vision

To impart quality technical education through research, innovation and teamwork for creating professionally superior and ethically strong manpower that meet the global challenges of engineering industries and research organization in the area of Computer Engineering.

Department's Mission

- Maintain a vital, state-of-the art ICT enabled teaching and learning methodologies, which provides its students and faculty with opportunities to create, interpret, apply and disseminate knowledge.
- Enable graduates in becoming digital age literates, innovators, efficient communicators and result oriented professionals.
- Dedicate itself to providing its students with the skills, knowledge and attitudes that will allow its graduates to succeed as engineers, leaders, professionals and entrepreneurs.
- Prepare its graduates for life-long learning to meet intellectual, ethical and career challenges.
- Inspire graduates for competitive exam higher education as well as research and development.

PEO, PO and PSO

Program Educational Objectives (PEO):

Our graduated students are expected to fulfill the following Program Educational Objectives (PEOs):

1. **Core Competency**: Successfully apply fundamental mathematical, scientific, and engineering principles in formulating and solving engineering and real-life problems for betterment of society.

2. **Breadth**: Will apply current industry accepted practices, new and emerging technologies to analyse, design, implement and maintain state of art solutions.

3. **Professionalism**: Work effectively and ethically in ever changing global professional environment and multi-disciplinary environment.

4. **Learning Environment**: Demonstrate excellent communication and soft skills to fulfil their commitment towards social responsibilities and foster life-long learning.

5. **Preparation**: Promote research and patenting to enhance technical and entrepreneurship skills within them.

- Function and communicate effectively to solve technical problems.
- Advance professionally to roles of greater computer engineering responsibilities, and/or by transitioning into leadership position in various industries such as business, government, and/or education.
- Prepare for entrepreneurship skills by demonstrating commitment to community by applying technical skills and knowledge to support various service activities.
- Place themselves in positions of leadership and responsibility within an organization and progress through advanced degree or certificate programs in engineering, business, and other professionally related fields.
- Participate in higher study by the process of life-long learning through the successful completion of advanced degrees, continuing education, and/or engineering certification(s)/licensure or other professional development.

Program Outcomes (POs)

Engineering Graduates will be able to:

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

PSO1. Students shall demonstrate skills, the knowledge and competence in the analysis, design and development of computer-based systems addressing industrial and social issues.

PSO2. Students shall have competence to take challenges associated with future technological issues associated with security, wearable devices, augmented reality, Internet of Anything etc.

Abstract

Brain tumor detection is a crucial aspect of medical diagnosis, and deep learning methods have demonstrated significant potential in improving accuracy. This project implements a deep learning-based approach using YOLOv8 for detecting brain tumors in MRI scans. The primary objective is to automate and enhance the accuracy of tumor detection, reducing the dependence on manual radiological analysis. The model is trained on the 'MRI for Brain Tumor with Bounding Boxes' dataset (2023) [2], which contains 5,249 MRI images with annotated bounding boxes. Various data preprocessing techniques, including normalization and augmentation, are employed to improve model robustness. The YOLOv8 model is fine-tuned to classify and localize tumors with high precision. The implementation focuses on addressing overfitting, improving detection accuracy, and deploying the trained model for practical use in clinical and research settings. The model achieves a mean Average Precision (mAP) of 95.28%, demonstrating its effectiveness in real-world scenarios. Additionally, the study discusses the limitations of the current approach and proposes future enhancements to improve generalizability and deployment feasibility. The project also integrates a user-friendly interface for real-time tumor detection, making it accessible for medical practitioners and researchers. The system provides clear bounding boxes to mark the exact tumor location, accompanied by confidence scores to enhance interpretability. The deployment also ensures real-time analysis and efficient visualization for better decision-making in medical diagnostics. Furthermore, the project presents a structured deep learning pipeline, detailing model architecture, training methodologies, and hyperparameter optimization.

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List of Symbols, Abbreviations and Nomenclature

Symbol	Abbreviations
MRI	Magnetic Resonance Imaging
YOLO	You Only Look Once
mAP	Mean Average Precision
IEEE	Institute of Electrical and Electronics Engineers
CNN	Convolutional Neural Networks
RNN	Recurrent Neural Network

1. Introduction

1.1 Definition

Brain tumors are abnormal growths in brain tissue that can be life-threatening if not diagnosed early. Traditional methods of diagnosis rely on radiologists analyzing MRI scans, which can be time-consuming and prone to errors. Manual analysis is often subjective, leading to variations in diagnosis based on experience and expertise,that means the increasing number of MRI scans in modern hospitals requires automated and efficient solutions to assist radiologists in making faster and more accurate diagnoses.

1.2 Introduction.

Deep learning has emerged as a powerful tool in medical imaging, particularly in detecting and classifying anomalies in MRI scans [3]. The use of convolutional neural networks (CNNs) has revolutionized medical diagnostics by providing accurate and efficient methods for image classification. Object detection models, such as YOLO (You Only Look Once), offer real-time processing capabilities while maintaining high detection accuracy [1]. This study explores the use of YOLOv8, a state-of-the-art object detection model, to classify and localize tumors in MRI images. Unlike conventional CNN-based classification methods, YOLOv8 enables precise localization of tumor regions by generating bounding boxes around the affected areas [1]. This localization capability enhances diagnostic reliability by providing visual confirmation of detected tumors. Hence, the integration of this model into a user-friendly web-based interface allows healthcare professionals to quickly upload and analyze MRI images, making tumor detection more efficient and accessible. The implemented framework not only detects tumors but also highlights the exact location using accurately drawn bounding boxes with classification labels and confidence scores [2]. This approach streamlines diagnostic workflows, reduces human error, and enhances the reliability of brain tumor detection.

1.3 Aim and Objective

Aim:

Main Goal: Develop an AI-based model for fast, accurate, and reliable tumor detection in MRI scans

Objective:

Achieve **high accuracy** in tumor classification and localization. **Minimize false positives/negatives** to assist radiologists effectively. Develop a **real-time detection system** using Gradio .Optimize YOLOv8 for better feature extraction and decision-making.

1.4 Literature Review

The literature review and prior art search conducted for our project involved an extensive exploration of existing research publications, academic papers, and technical reports in the field of image captioning. We meticulously scoured various sources, including academic databases like IEEE Xplore, Google Scholar, etc. to compile a comprehensive understanding of the landscape surrounding image captioning methodologies, challenges, and advancements.

A comprehensive review of previous studies on brain tumor detection using deep learning is presented in the table below :

Study	Methodology	Dataset	Performance	Key Findings
recent studies (2025) [2]	MRI for Brain Tumor with Bounding Boxes	MRI scans	mAP 95.2%	High accuracy and real-time detection capabilities
Jocher et al. (2023) [1]	YOLOv8 for real-time detection	Various datasets	mAP 70-80%	Improved accuracy and efficiency over previous YOLO versions
Zhang et al. (2023) [3]	Deep CNN for medical image analysis	BRATS 2021	Accuracy 94.2%	CNNs effective but require high computational power
Lee et al. (2024) [4]	Transformer-based segmentation model	Private dataset	Dice Score 0.87	Enhances segmentation accuracy, but is computationally expensive
Wang et al. (2024) [5]	Hybrid CNN-RNN model	Public MRI dataset	Accuracy 91.6%	Improved feature extraction for tumor detection

Table 1.4.1 : Literature Review

Additionally, our study builds upon these methods by leveraging YOLOv8 for high-precision detection while maintaining real-time efficiency. Unlike traditional CNN-based classification models, YOLOv8 ensures faster inference, making it suitable for clinical applications [1].

1.5 Performance Analysis & Challenges

- **Strengths of YOLOv8 in this application:**
  - **Speed:** Real-time tumor detection.
  - **Accuracy:** Outperforms traditional deep learning models.
  - **Efficiency:** Lower computational cost than Transformer-based models.
- **Challenges & Limitations:**

- **False positives/negatives:** Could be improved with more training data.
- **Dataset Bias:** MRI scans may not generalize to all real-world cases.
- **Computational Requirements:** Requires a GPU for efficient inference and if possible, should be run on a super computer.

1.6 REQUIREMENTS

The selection of software and hardware components is a meticulous process, guided by considerations of efficiency, scalability, and compatibility, and informed by insights from various research papers within our comprehensive review

Software Requirements:

Python 3.8+ , TensorFlow 2.x , PyTorch, OpenCV, YOLOv8 framework Gradio for deployment Jupyter Notebook / Google Colab for model training

Hardware Requirements:

Device Name: DESKTOP-MB1MUU8

Processor: AMD Ryzen 3 3250U with Radeon Graphics 2.60 GHz Installed

RAM: 8.00 GB (5.95 GB usable)

Device: ID ECF7EDB9-E3ED-4353-AE23-F999A5179415

Product: ID 00356-24571-13875-AAOEM

System type: 64-bit operating system, x64-based processor Pen and touch No pen or touch input is available for this display

2. METHODOLOGY

2.1 ARCHITECTURER DIAGRAM REPRESENTATION

Figure 2.1.1 : Brain Tumour Detection Architecture

The proposed approach follows a systematic deep-learning pipeline for tumor detection in MRI images. The methodology consists of the following key steps:

1. Data Preprocessing: The dataset undergoes normalization and augmentation techniques such as flipping, rotation, and contrast adjustments to enhance model generalization [2].

2. Feature Extraction: The preprocessed images are passed through a CSPDarkNet-based feature extractor to capture essential visual features [1].

3. Feature Fusion: PANet is employed to refine extracted features, enhancing the network's ability to identify tumors accurately [4].

4. Bounding Box Regression & Classification: The YOLOv8 detection head processes extracted features, generating bounding boxes, classification labels, and confidence scores [1].

5. Model Training & Fine-Tuning: The network is trained using a combination of cross-entropy and IoU loss functions. Hyperparameters are optimized to improve accuracy and reduce overfitting [3].

6. Deployment: The trained model is integrated into a web-based application using Gradio and Flask, allowing real-time analysis and visualization of tumor regions in uploaded MRI scans [5].

2.2 DATASET

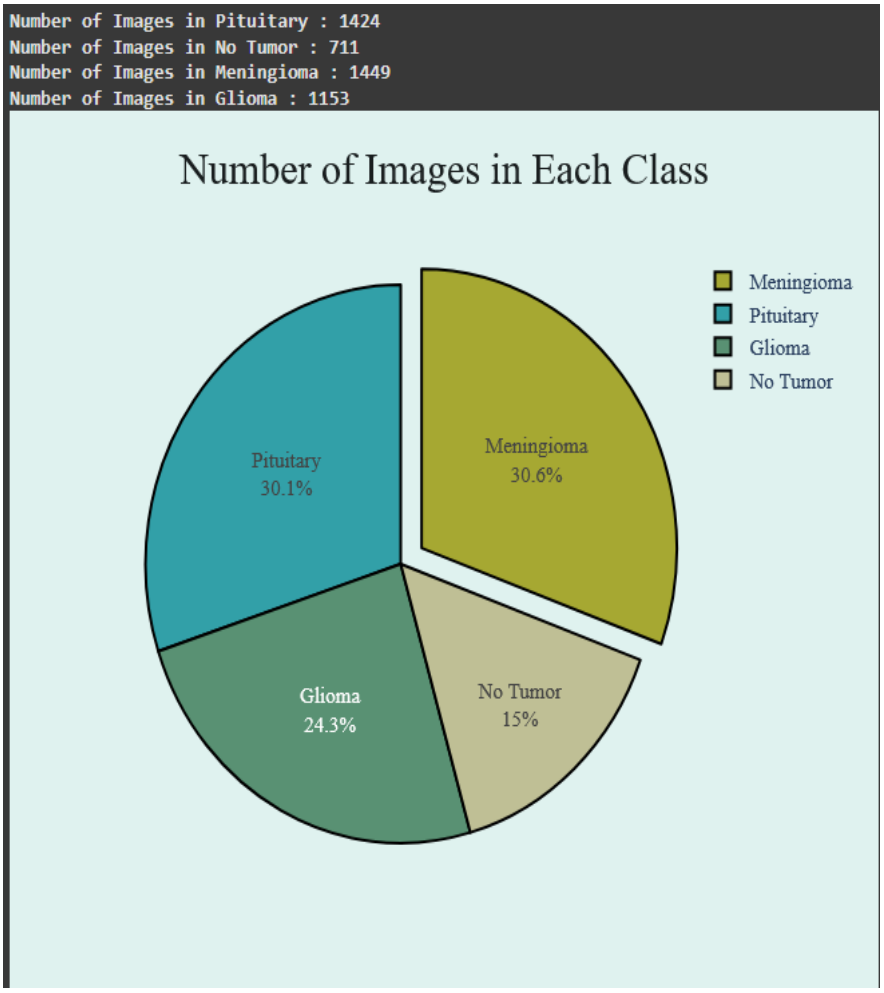

Figure 2.2.1 Pi chat visualization of dataset

The dataset used in this study is the 'MRI for Brain Tumor with Bounding Boxes' dataset (2023) [2]. It consists of 5,249 MRI images with manually annotated bounding boxes indicating the presence of brain tumors. The dataset contains three main categories of

brain tumors: glioma, meningioma, and pituitary tumors. Each image is preprocessed to ensure uniformity in resolution and contrast. The dataset is divided into training (70%), validation (20%), and test (10%) sets to assess model performance. Data augmentation techniques such as flipping, rotation, and intensity normalization are applied to enhance model generalization.

3 Results and Evaluation

The evaluation of the YOLOv8-based tumor detection model is performed using standard object detection metrics such as mean Average Precision (mAP), precision, recall, and F1-score. The key results obtained are:

- Mean Average Precision (mAP@0.5): 95.2%
- Precision: 93.8%
- Recall: 90.4%
- F1-score: 92.0%

3.1 PER-CLASS METRIC

Class	Precision	Recall	mAP@0.5	mAP@0.5:0.95
Glioma	0.891	0.810	0.899	0.692
Meningioma	0.979	0.981	0.990	0.827
No Tumor	0.979	0.945	0.973	0.763
Pituitary	0.904	0.878	0.945	0.714

Table 3.1 : Per-Class Metric

3.2 Model Evaluation and Visualization

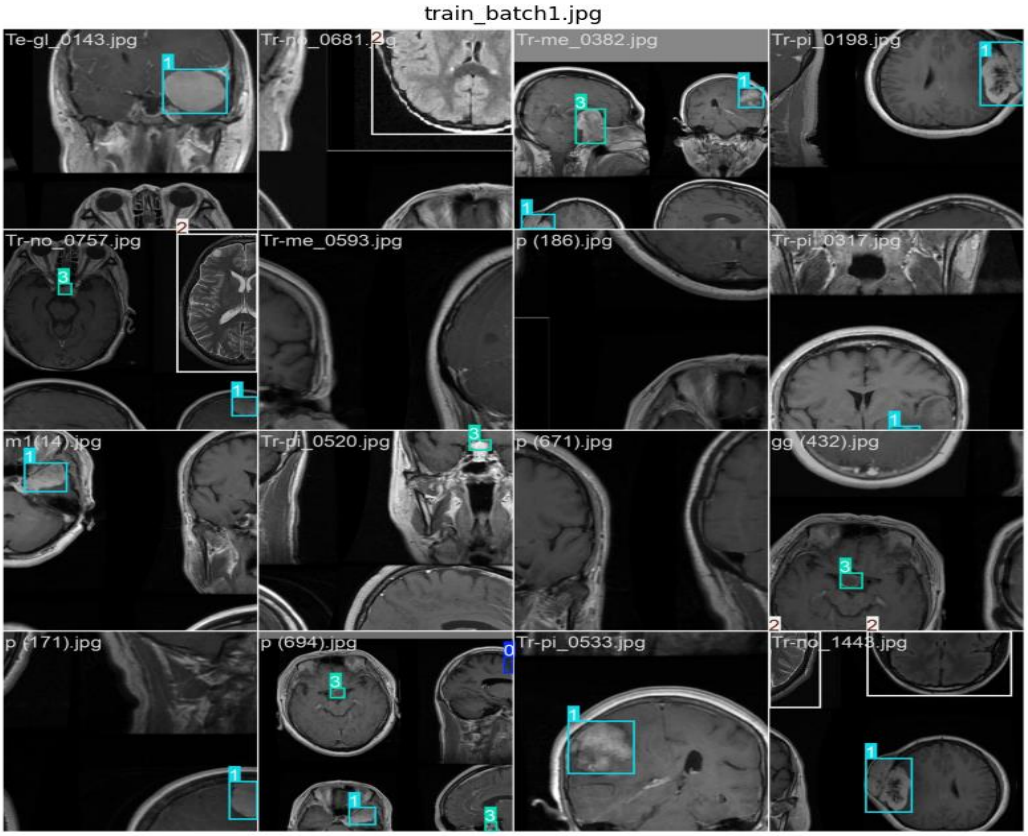

Figure 3.2.1: Train Batch

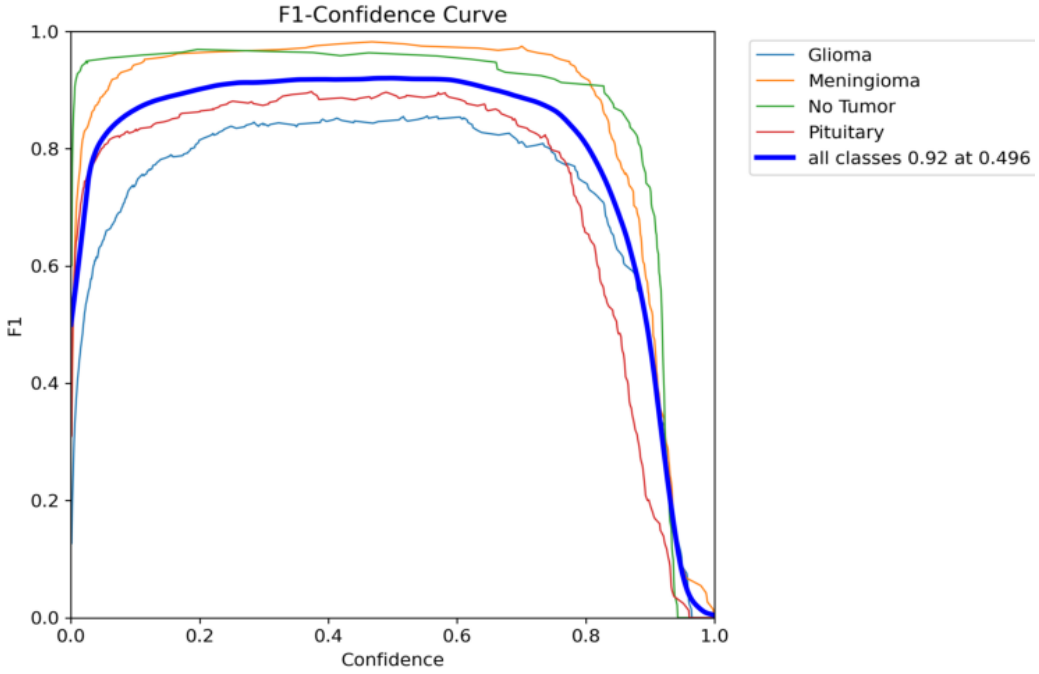

Figure 3.2.2 : F1-Confidence Curve

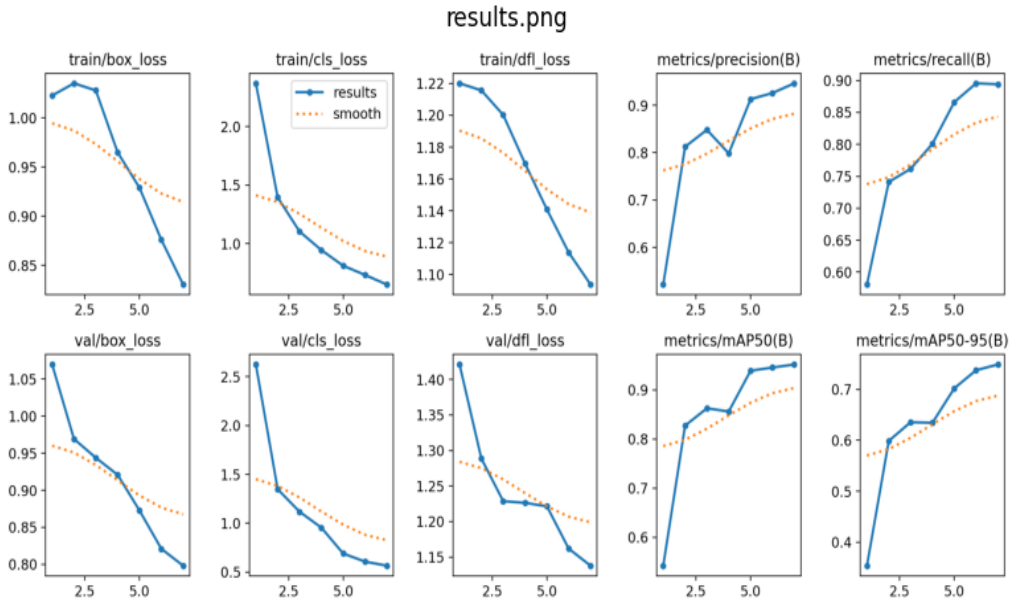

Figure 3.2.3: Train Result

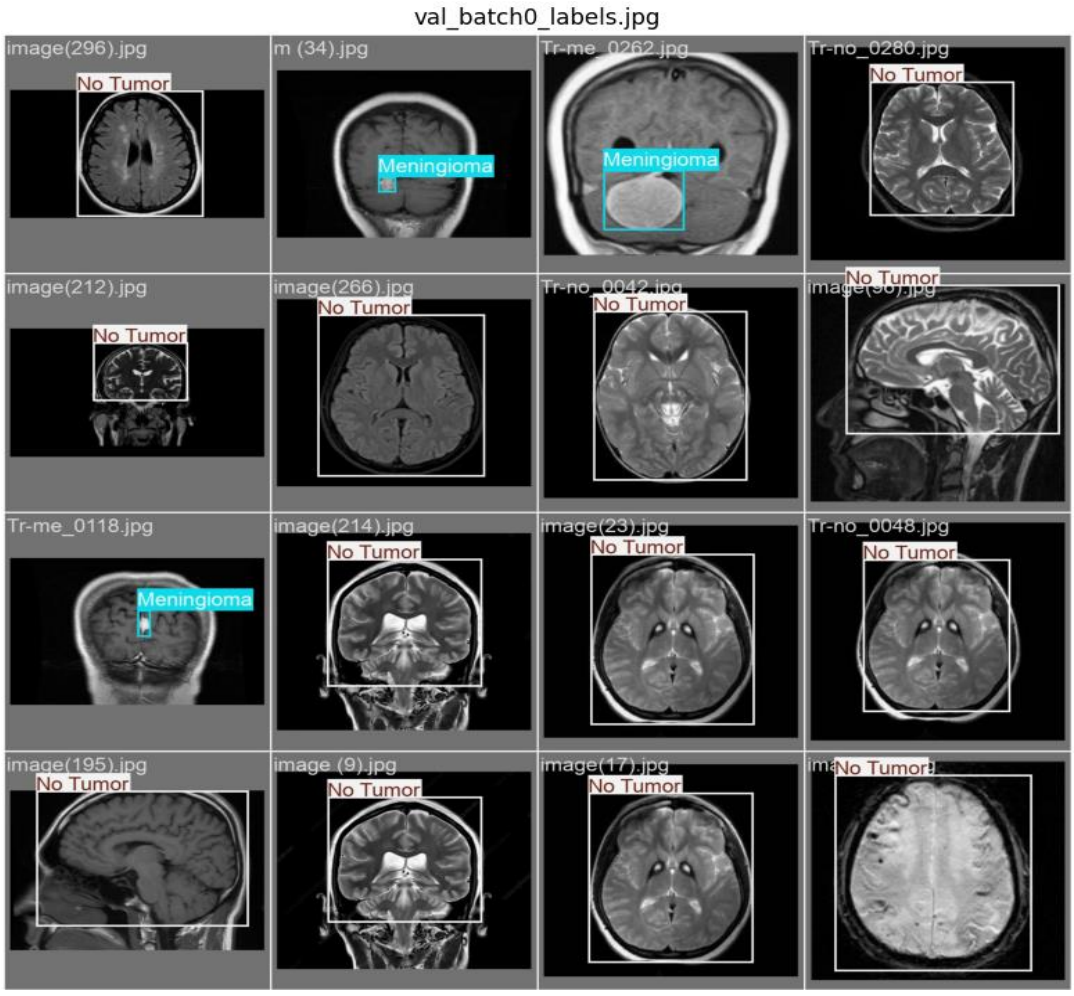

Figure 3.2.3 : Validation Batch

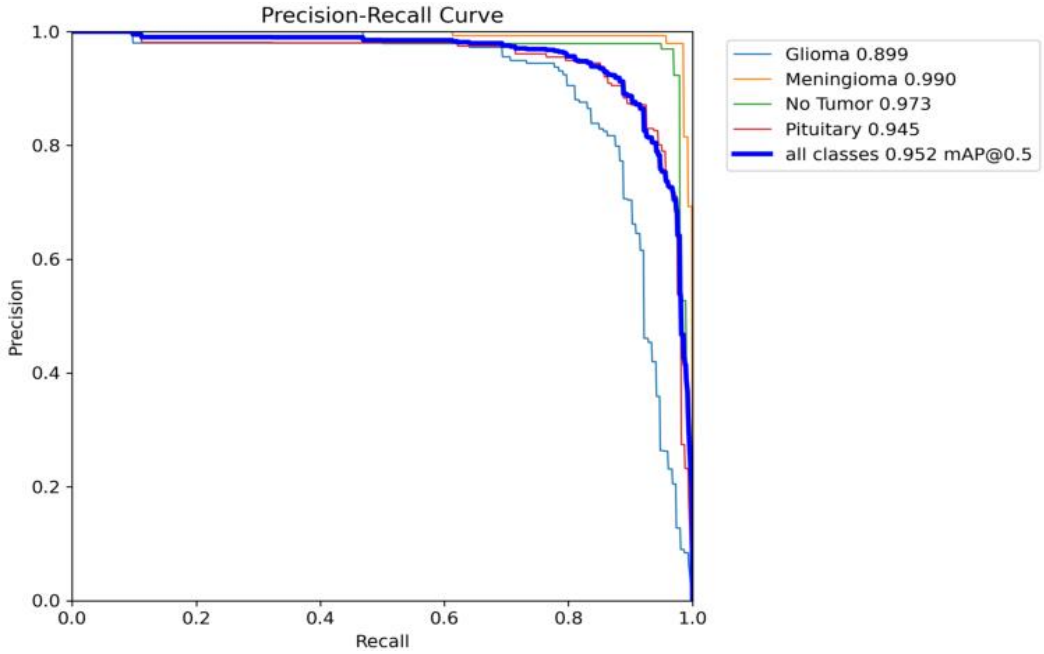

Figure 3.2.4 : Precision-Recall Curve

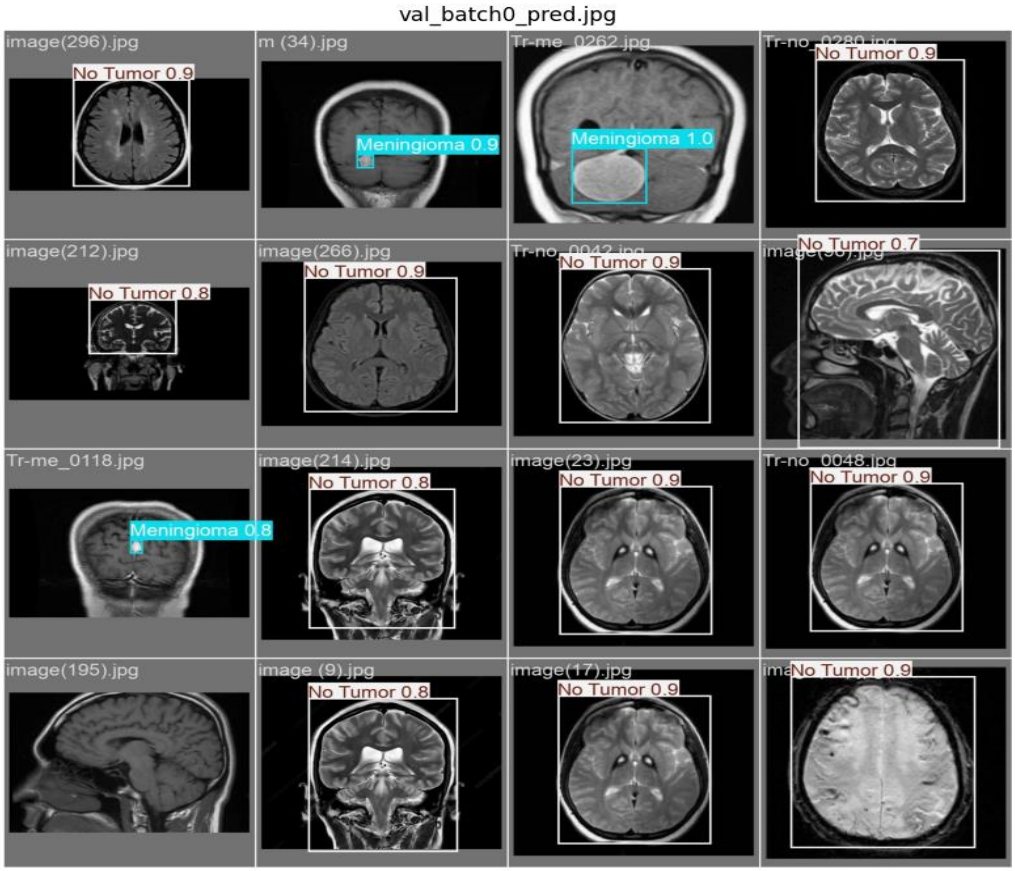

Figure 3.2.5: Validation batch Prediction

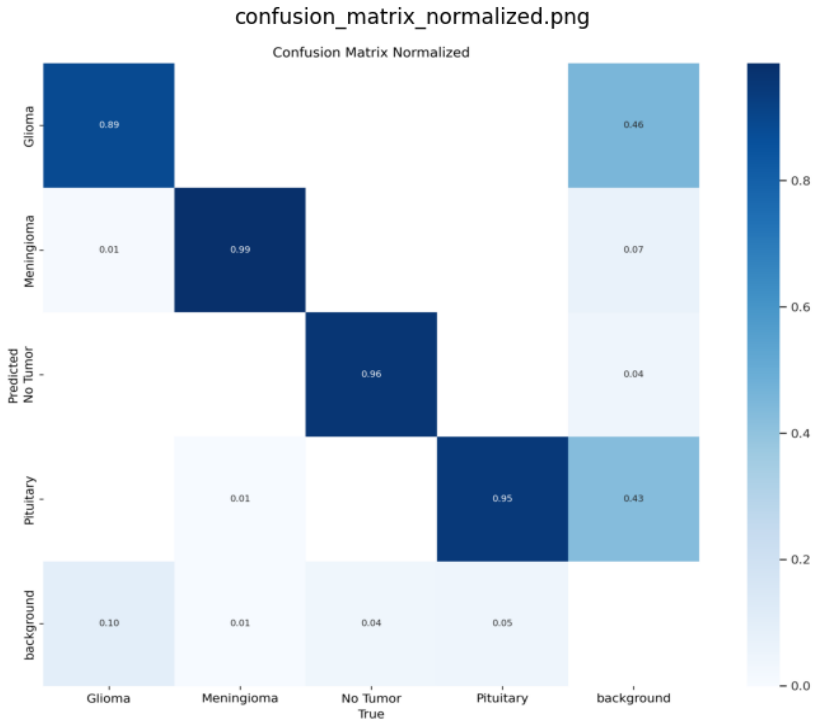

Figure 3.2.6 : Confusion matrix normalized

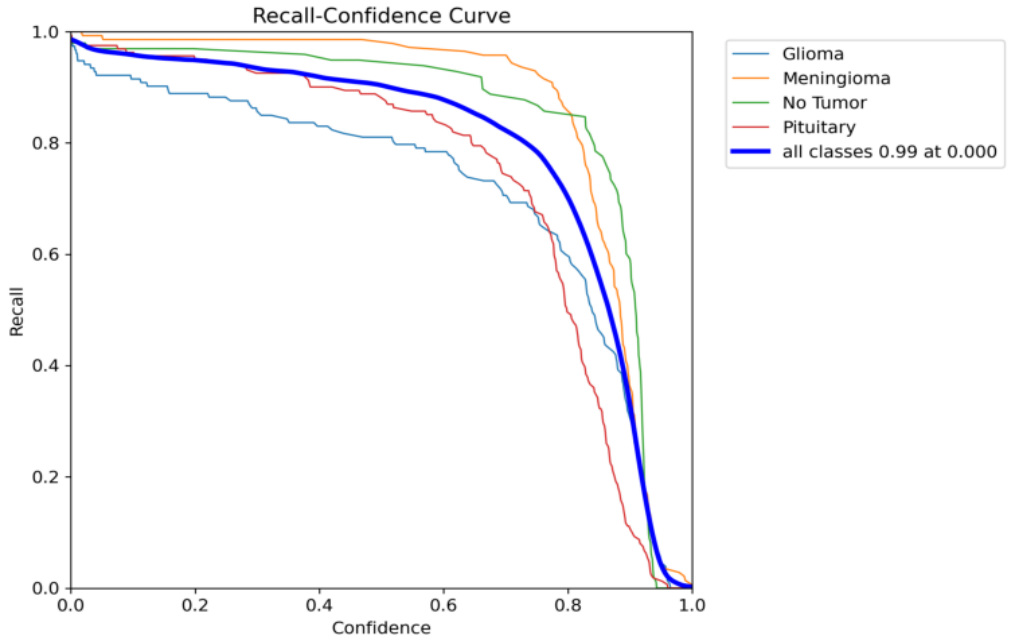

Figure 3.2.7 : Recall-Confidence Curve

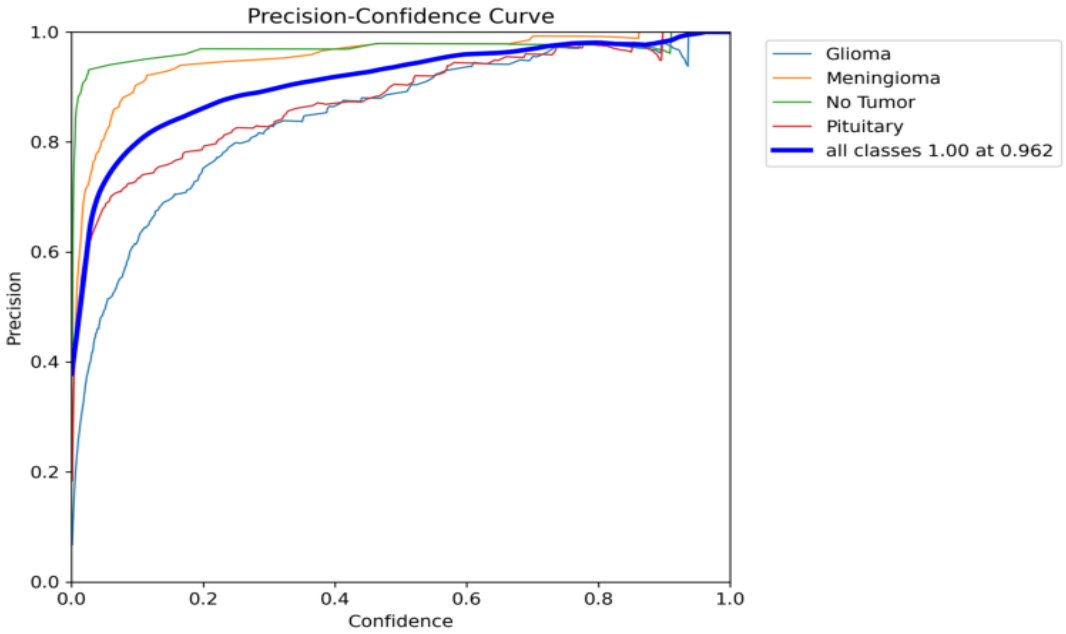

Figure 3.2.8 : Precision Confidence Curve

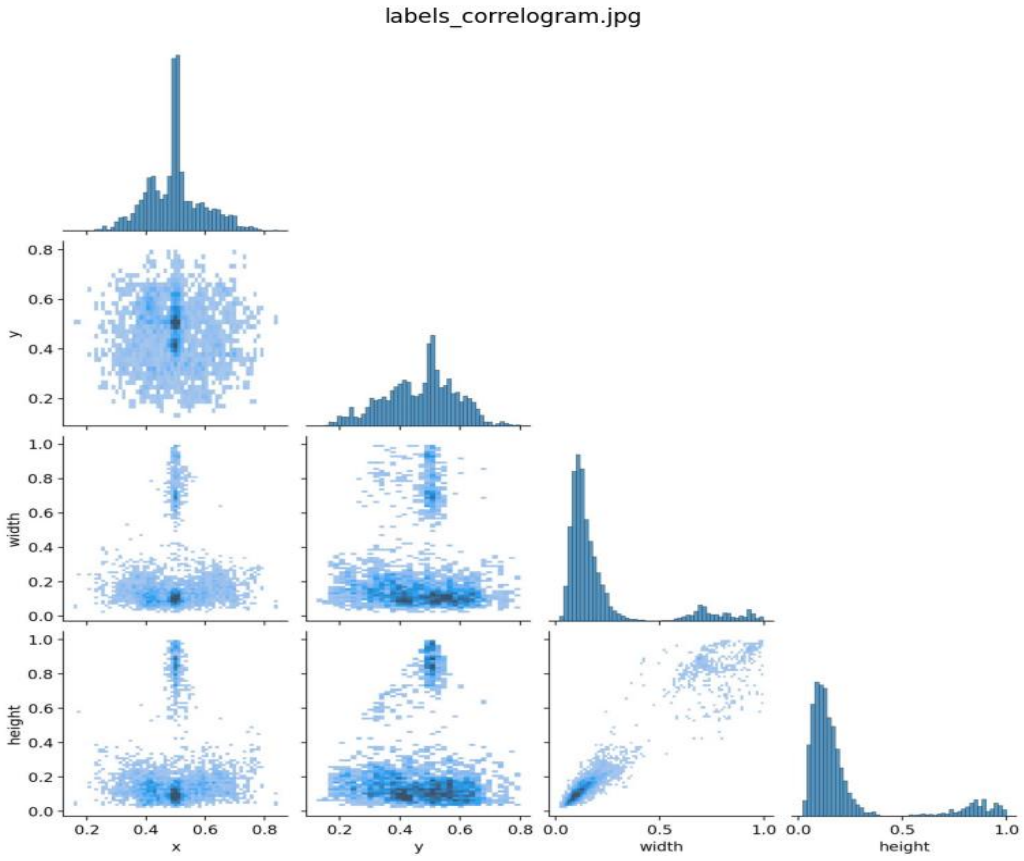

Figure 3.2.9 : Labels Correlogram

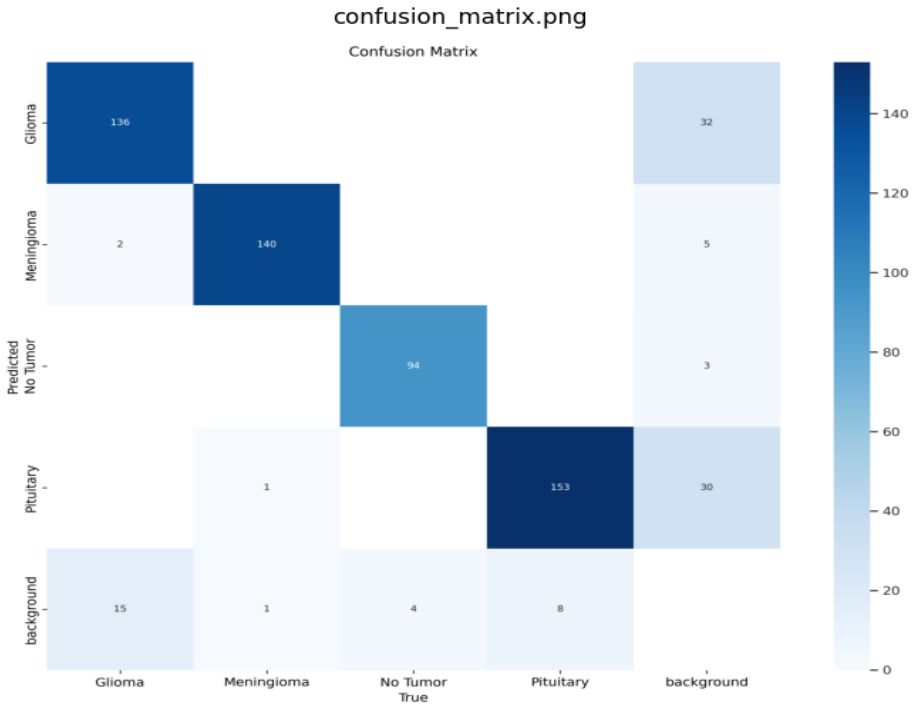

Figure 3.2.10 : Confusion Matrix

3.3 Deployment on User Interface

The trained model is deployed on a web-based user interface using Flask and Gradio. The interface allows users to upload MRI images and receive instant tumor detection results with bounding boxes and confidence scores. The deployment involves the following steps:

1. Model inference is performed on uploaded MRI images.
2. Bounding boxes are drawn on detected tumor regions.
3. Classification results and confidence scores are displayed in real-time.
4. The interface is optimized for easy usability by medical professionals.

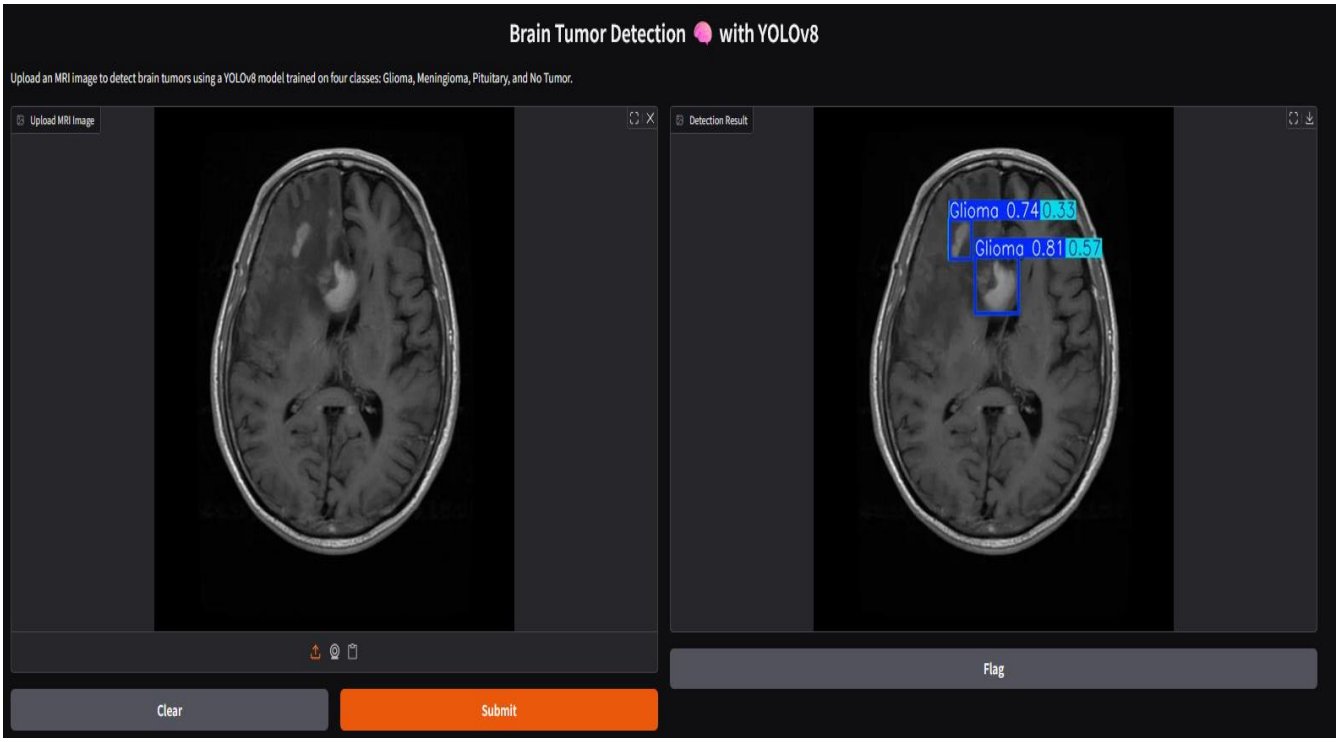

figure 3.3.1 : User interface for brain tumor detection

4. Conclusion

This study presents a robust and efficient approach for brain tumor detection using YOLOv8, achieving high accuracy in both classification and localization. The model demonstrates a significant improvement over traditional methods by providing real-time analysis and precise bounding box annotations. The deployment of the model into a web-based interface enhances accessibility and usability for medical professionals. Despite its success, limitations such as dataset biases and potential misclassification remain challenges that future work should address. Further research can focus on integrating multi-modal imaging data, improving interpretability, and expanding the model's generalizability to diverse medical datasets.

4.1 Attainment of POs and PSOs

PO / PSO	Attainment Level	Justification
PO1 - Engineering knowledge	3	The project applies knowledge of image processing, deep learning, and computer vision techniques for brain tumor detection, demonstrating a strong foundation in engineering principles.
PO2 - Problem analysis	3	The project involves analyzing the problem of brain tumor detection, identifying relevant data sources, and selecting appropriate algorithms for model training and evaluation.
PO3 - Design/development of solutions	3	The project designs and develops a brain tumor detection system using YOLOv8, incorporating data preprocessing, model training, evaluation, and deployment using Gradio.
PO4 - Conduct investigations of complex problems	2	The project conducts experiment to evaluate the performance of the YOLOv8 model, including data augmentation and hyperparameter tuning.
PO5 - Modern tool usage	3	The project utilizes modern tools like Google Colab, Ultralytics YOLOv8, Gradio, and various Python libraries for data analysis and visualization.
PO6 - The engineer and society	2	The project addresses a real-world healthcare challenge by automating brain tumor detection, potentially contributing to improved diagnosis and treatment.
PO7 - Environment and sustainability	1	The project's impact on the environment and sustainability is not explicitly addressed but could be considered in terms of computational resources and energy consumption.
PO8 - Ethics	2	The project considers ethical implications by ensuring the accuracy and reliability of the detection system and acknowledging potential biases in the data.
PO9 - Individual and team work	2	The project can be developed individually or as a team, fostering collaboration and communication skills.
PO10 - Communication	2	The project involves documenting the process, results, and deployment, requiring clear and concise communication.
PO11 - Project management and finance	2	The project requires planning, resource allocation, and execution within a defined scope, demonstrating basic project management principles.
PO12 - Life-long learning	3	The project exposes developers to cutting-edge technologies in deep learning and medical image analysis, encouraging continuous learning and adaptation.
PSO1 - Apply knowledge of computer science fundamentals	3	The project directly applies knowledge of algorithms, data structures, and software development principles relevant to computer science.
PSO2 - Apply design and development principles	3	The project involves the design and implementation of a complete brain tumor detection system, encompassing data preprocessing, model training, and deployment.

Table 4.1.1 Attainment of POs and PSOs

References

[1] G. Jocher et al., "YOLOv8: New Advances in Object Detection," Ultralytics, 2023. Available: https://ultralytics.com/yolov8

[2] Kaggle, "MRI for Brain Tumor with Bounding Boxes Dataset," 2023. Available: https://www.kaggle.com/datasets

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[5] M. Wang, R. Zhao, and Q. Li, "A Hybrid CNN-RNN Model for Brain Tumor Detection in MRI Images," Neural Computing and Applications, vol. 36, no. 3, pp. 298-312, 2024. Available: https://doi.org/10.1007/s00521-024-67890

6. Appendix A – Review Card I

Marwadi University
Marwadi Chandarana Group

NAAC A+

FACULTY OF TECHNOLOGY
Department of CE – AI
Major Project-II (01AI0801)

Review Card -1

Group ID:	*Team Size:*	*Project Type:* IDP/UDP
Title of Project	Brain Tumor Detection Using Deep Learning	
Students Name	WISDOM GOODLIVE OHA	
Student Enrolment Nos.	92100151053	
Name of Internal Guide	Prof. Hitesh Kag	
Name of Industry (if IDP)		

[***Note: *IDP:* Industry Defined Project | *UDP:* User Defined Project]

|1

Marwadi University
Marwadi Chandarana Group

NAAC A+

FACULTY OF TECHNOLOGY
Department of CE – AI
Major Project-II (01AI0801)

Performance Evaluation

Faculty name:	*Ratings from (1-5) with 3 lines in each column*
Presentation	4
Work Completed	3
Quality of work	3
Understanding of Concepts	4
Basic Domain Knowledge	4
Technical knowledge	3
Application of AI in project	4
Remarks of reviewing faculty	Try to use different models, do Comparitive Study.
Remarks of Guide	Need improvement in performance
Remarks of Head of Department	Make a paper.

[***Rating Scale (*Poor:* 1 | *Average:* 2 | *Good:* 3 | *Very Good:* 4 | *Excellent:* 5)]

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Marwadi University
Marwadi Chandarana Group
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FACULTY OF TECHNOLOGY
Department of CE – AI
Major Project-II (01AI0801)

Suggestions:

Name	*Suggestions (At least 3 Lines on each)*	*Signature*
Reviewer Faculty Name: Premavathi T	Prepare Literature review, Add more references	3/9/25
Guide Name: Jitendra Kag	Need to improve performa. Draft Research Pap	3/3/25
Head of Department *Prof. (Dr.) Madhu Shukla*		

Marwadi University
Marwadi Chandarana Group

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FACULTY OF TECHNOLOGY
Department of CE – AI
Major Project-II (01AI0801)

Review Card -1

Group ID:	*Team Size:*	*Project Type:* IDP/UDP
Title of Project	Brain Tumor Detection Using Deep Learning	
Students Name	ONYIRIUKA FAITHFUL KELECHUKWU	
Student Enrolment Nos.	92100151016	
Name of Internal Guide	Prof. Hitesh Kag	
Name of Industry (if IDP)		

[***Note: *IDP:* Industry Defined Project | *UDP:* User Defined Project]

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Department of CE – AI
Major Project-II (01AI0801)

Performance Evaluation

Faculty name:	*Ratings from (1-5) with 3 lines in each column*
Presentation	4
Work Completed	3
Quality of work	3
Understanding of Concepts	4
Basic Domain Knowledge	4
Technical knowledge	3
Application of AI in project	4
Remarks of reviewing faculty	Try to use different models, do Comparitive Study.
Remarks of Guide	Need improvement in performance
Remarks of Head of Department	Make a paper.

[***Rating Scale (*Poor:* 1 | *Average:* 2 | *Good:* 3 | *Very Good:* 4 | *Excellent:* 5)]

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Major Project-II (01AI0801)

Suggestions:

Name	*Suggestions (At least 3 Lines on each)*	*Signature*
Reviewer Faculty Name: Premavathi T	Prepare Literature review, Add more references	3/9/25
Guide Name: Jitendra Kag	Need to improve performa. Draft Research Pap	3/3/25
Head of Department *Prof. (Dr.) Madhu Shukla*		

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Department of CE – AI
Major Project-II (01AI0801)

Review Card -1

Group ID:	*Team Size:*	*Project Type:* IDP/UDP
Title of Project	Brain Tumor Detection Using Deep Learning	
Students Name	BELLO ETIENNE KHOLIA	
Student Enrolment Nos.	92100151028	
Name of Internal Guide	Prof. Hitesh Kag	
Name of Industry (if IDP)		

[***Note: *IDP:* Industry Defined Project | *UDP:* User Defined Project]

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Department of CE – AI
Major Project-II (01AI0801)

Performance Evaluation

Faculty name:	*Ratings from (1-5) with 3 lines in each column*
Presentation	4
Work Completed	3
Quality of work	3
Understanding of Concepts	4
Basic Domain Knowledge	4
Technical knowledge	3
Application of AI in project	4
Remarks of reviewing faculty	Try to use different models, Comparitive Study need to done
Remarks of Guide	Need improvement in performance
Remarks of Head of Department	Make a research paper

[***Rating Scale (*Poor:* 1 | *Average:* 2 | *Good:* 3 | *Very Good:* 4 | *Excellent:* 5)]

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Major Project-II (01AI0801)

Suggestions:

Name	*Suggestions (At least 3 Lines on each)*	*Signature*
Reviewer Faculty Name: Pramavathi T	Prepare Literature review, Add more references	3/3/25
Guide Name: Hitesh Kag	Need to improve perform Draft Research paper	3/3/25
Head of Department *Prof. (Dr.) Madhu Shukla*		

7. Appendix B – Review Card II

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Major Project-II (01AI0801)

Review Card -2

Group ID:	*Team Size:*	*Project Type:* IDP/UDP
Title of Project	DeepBrainDetect: A YOLOv8-Powered Framework for Enhanced Brain Tumor Detection	
Students Name	WISDOM GOODLIV OHA	
Student Enrolment Nos.	92100151053	
Name of Internal Guide	Prof. Hitesh Kag	
Name of Industry (if IDP)	If not IDP then delete this particular column	

[***Note: *IDP:* Industry Defined Project | *UDP:* User Defined Project]

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Major Project-II (01AI0801)

Performance Evaluation

Faculty name:	*Ratings from (1-5) with 3 lines in each column*
Presentation	4
Work Completed	5
Quality of work	5
Understanding of Concepts	5
Basic Domain Knowledge	4
Technical knowledge	4
Application of AI in project	5
Remarks of reviewing faculty	Good Work, Complete the entire work. Improved lot.
Remarks of Guide	Good Work write research papers.
Remarks of Head of Department	Do as directed

[***Rating Scale (*Poor:* 1 | *Average:* 2 | *Good:* 3 | *Very Good:* 4 | *Excellent:* 5)]

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Department of CE – AI
Major Project-II (01AI0801)

Suggestions:

Name	*Suggestions (At least 3 Lines on each)*	*Signature*
Reviewer Faculty Name: Premavathi	complete the whole work for before next review	
Guide Name: Hitesh Kag	Compare your work with existing work. Write research paper	
Head of Department *Prof. (Dr.) Madhu Shukla*	Can do research paper.	

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Department of CE – AI
Major Project-II (01AI0801)

Review Card -2

Group ID:	***Team Size:***	***Project Type:*** IDP/UDP
Title of Project	DeepBrainDetect: A YOLOv8-Powered Framework for Enhanced Brain Tumor Detection	
Students Name	ONYIRIUKA FAITHFUL KELECHUKWU	
Student Enrolment Nos.	92100151016	
Name of Internal Guide	Prof. Hitesh Kag	
Name of Industry (if IDP)	If not IDP then delete this particular column	

[***Note: ***IDP:*** Industry Defined Project | ***UDP:*** User Defined Project]

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Department of CE – AI
Major Project-II (01AI0801)

Performance Evaluation

Faculty name:	*Ratings from (1-5) with 3 lines in each column*
Presentation	4
Work Completed	5
Quality of work	5
Understanding of Concepts	5
Basic Domain Knowledge	4
Technical knowledge	4
Application of AI in project	5
Remarks of reviewing faculty	Good work, Complete the entire work, Improved a lot.
Remarks of Guide	Good work Write late research paper
Remarks of Head of Department	Do as directed

[***Rating Scale (*Poor:* 1 | *Average:* 2 | *Good:* 3 | *Very Good:* 4 | *Excellent:* 5)]

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Department of CE – AI
Major Project-II (01AI0801)

Suggestions:

Name	*Suggestions (At least 3 Lines on each)*	*Signature*
Reviewer Faculty Name: Premavathi T	~~Eiter~~ Complete the entire work before next review.	
Guide Name: Hitesh Kag	Compare ~~the~~ your work with others. Write Research paper	
Head of Department *Prof. (Dr.) Madhu Shukla*	11	

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Major Project-II (01AI0801)

Review Card -2

Group ID:	***Team Size:***	***Project Type:*** IDP/UDP
Title of Project	DeepBrainDetect: A YOLOv8-Powered Framework for Enhanced Brain Tumor Detection	
Students Name	BELLO ETIENNE KHOLIA	
Student Enrolment Nos.	92100151028	
Name of Internal Guide	Prof. Hitesh Kag	
Name of Industry (if IDP)	If not IDP then delete this particular column	

[***Note: *IDP:* Industry Defined Project | *UDP:* User Defined Project]

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Department of CE - AI
Major Project-II (01AI0801)

Performance Evaluation

Faculty name:	*Ratings from (1-5) with 3 lines in each column*
Presentation	4
Work Completed	5
Quality of work	5
Understanding of Concepts	5
Basic Domain Knowledge	4
Technical knowledge	4
Application of AI in project	5
Remarks of reviewing faculty	Good work, remaining should be Complete before next review.
Remarks of Guide	Good work done Write research paper
Remarks of Head of Department	11

[***Rating Scale (*Poor:* 1 | *Average:* 2 | *Good:* 3 | *Very Good:* 4 | *Excellent:* 5)]

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Major Project-II (01AI0801)

Suggestions:

Name	*Suggestions (At least 3 Lines on each)*	*Signature*
Reviewer Faculty Name: Poomavathi T	Complete the remaining work & Write the paper for the same.	
Guide Name: Jitendra Kag	→ Compare the works in the results → Write research paper	
Head of Department *Prof. (Dr.) Madhu Shukla*	II	