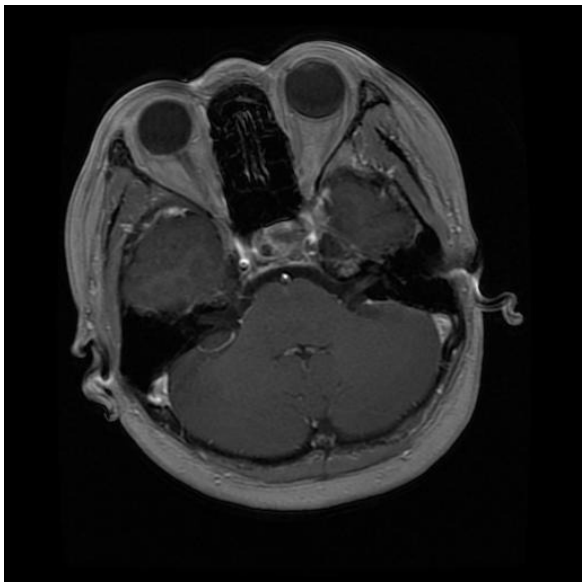
Brain Tumor Classification Report

Patient ID:	
Report Date:	2025-07-20T14:45:13.056312
Predicted Class:	Pituitary
Confidence Score:	99.98%



Executive Summary

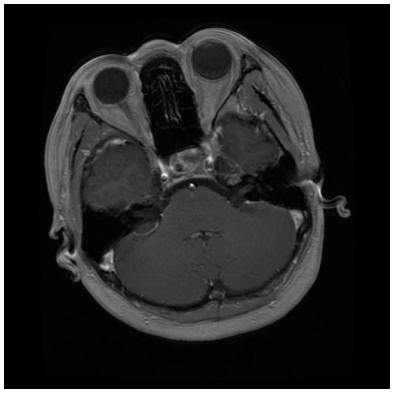
This report presents the results of an automated brain tumor classification analysis performed using a deep learning model. The analysis was conducted on an MRI brain scan and provides a comprehensive assessment of the detected abnormalities. **Key Findings:** • Predicted Tumor Type: Pituitary • Confidence Level: 99.98% • Analysis Method: Convolutional Neural Network (CNN) with Grad-CAM visualization • Model Accuracy: 94% (validation set) The Grad-CAM visualization highlights the regions of the brain scan that were most influential in the model's decision-making process, providing transparency and interpretability to the classification results.

Detailed Analysis Results

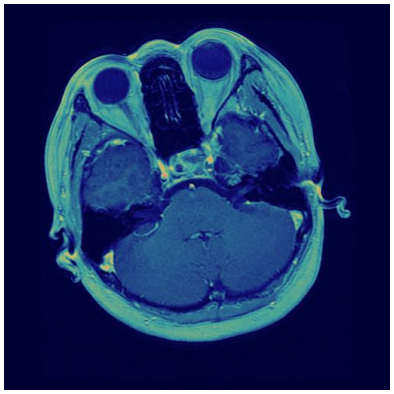
Confidence Scores by Class

Class	Confidence Score	Percentage
Glioma	0.0000	0.00%
Meningioma	0.0001	0.01%
No Tumor	0.0000	0.00%
Pituitary	0.9998	99.98%

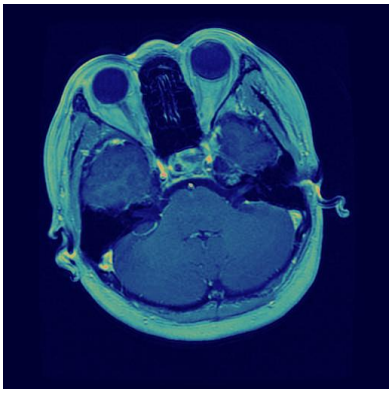
Visual Analysis



Original Image



Grad-CAM Heatmap



Overlay Visualization

Model Information

Architecture:	Convolutional Neural Network (CNN)
Framework:	TensorFlow/Keras
Input Size:	150x150 pixels
Number of Classes:	4 (Glioma, Meningioma, No Tumor, Pituitary)
Training Date:	2024
Validation Accuracy:	94%
Explainability Method:	Grad-CAM (Gradient-weighted Class Activation Mapping)
Model Version:	1.0

Important Disclaimer

Medical Disclaimer: This report is generated by an automated artificial intelligence system and is intended for research and educational purposes only. The results should not be used as the sole basis for clinical decision-making. • This analysis is not a substitute for professional medical diagnosis • All results should be reviewed and validated by qualified medical professionals • The model has been trained on a specific dataset and may not generalize to all cases • Clinical correlation with patient history and other diagnostic tests is essential • The confidence scores indicate model certainty, not clinical certainty **Technical Disclaimer:** The Grad-CAM visualization shows regions that influenced the model's decision but does not guarantee clinical significance. The model's performance may vary depending on image quality, acquisition parameters, and patient-specific factors. For clinical use, please consult with qualified radiologists and medical professionals.