

Building a brain tumor detection and classification system from MRI images using YOLOv11

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Abstract: In the context of healthcare increasingly focusing on accurate diagnosis of pathologies, this topic focuses on building an automated system to detect and classify brain tumors from MRI images. The objective of the research is to provide a practical solution to help doctors improve diagnostic efficiency. The research methodology includes both the theoretical part on the YOLOv11 deep neural network and the experimental part aimed at deploying the system on MRI data. The expected results will demonstrate the feasibility of this solution, making a significant contribution to improving the medical diagnostic process.

Keywords: Brain tumor detection system, YOLOv11, MRI images, Automated diagnosis, Deep neural network