

UNIVERSITI TEKNOLOGI MARA

**GLIOMA BRAIN TUMOUR
CLASSIFICATION AND DETECTION
OF MAGNETIC RESONANCE
IMAGING USING
CONVOLUTIONAL NEURAL
NETWORK**

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BACHELOR OF COMPUTER SCIENCE (Hons.)

JULY 2023

ACKNOWLEDGEMENT

Alhamdulillah, praises and thanks to Allah because of His Almighty and His utmost blessings throughout my research work to complete this research successfully within the time duration given. Firstly, my special thanks go to my supervisor, Madam Rosniza Binti Roslan, lecturer at College of Computing, Informatics and Mathematics for providing me an invaluable guidance throughout this research. Her dynamism, vision, sincerity, and motivation have deeply inspired me in the journey completing this research. It was a great privilege and honour to work and study under her guidance and I could not have imagined having a better advisor and mentor for my final year project in Degree study.

Special appreciation also goes to my beloved parents, Abdul Ghaffar bin Abdul Jalil and Nor Awiyah Binti Rashid who supports me and be a pillar for me to keep me strong throughout the whole journey. Finally, I would like to give my gratitude to my dearest fellow classmates in class CS2306A for the stimulating discussion, sleepless night while working together for the deadlines. Even for all the fun we have had even in the last 2 years of online learning and a final year were we finally met each other faces. It was nice meeting all of you, my heartfelt thanks.

ABSTRACT

In Malaysia, brain tumour is uncommon cancer in comparison to other types of cancer, only 1.95% of malignancies cases have been reported by the Malaysian Journal of Public Health Medicine (2017). There are numerous types of brain tumours have been identified, such as Glioma. This glioma abnormality occurs in the brain and spinal cord and is one of the most common types of primary brain tumours. It is the most aggressive and fatal type of tumour. Magnetic Resonance Imaging is an effective non-invasive method to detect presence of brain tumour, but it has limitations. The problem that is addressed in this research is that the manual evaluation of detecting brain tumours consumes time and to able to classify brain tumour, feature extraction needed to be done but it is complex. Besides that, noise interference may affect tumour classification accuracy. This research uses Convolution Neural Network to classify and detect the MRI brain image. Hence the objective of this research is to design and develop a prototype of glioma brain tumour classification and detection of MRI brain images using CNN. Lastly, evaluation is done to test the accuracy, functionality, and usability of the proposed prototype and had achieved 99.00% accuracy, 100.00% precision, 98.00% recall. The proposed method of detection on MRI brain images accurately classifies and detect the image and achieving a great score of classification accuracy. With further extensive research, the system can be improved with detecting more classes of MRI brain images and able to detect the location of the abnormalities in the brain region.

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