UNIVERSITI TEKNOLOGI MARA

MALAYSIAN SIGN LANGUAGE RECOGNITION USING LSTM

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BACHELOR OF COMPUTER SCIENCE (Hons.)

JANUARY 2024

ACKNOWLEDGEMENT

In the name of Allah, the Most Gracious and the Most Merciful. All praises to Allah and His blessing for the completion of this research. I thank Him for all the opportunities, trials, and strength that have been showered on me to finish on writing this report.

First and foremost, I would like to sincerely thank my lecture, Madam Ummu Fatihah binti Mohd Bahrin for her guidance, understanding patience and most importantly, she has provided positive encouragement, through and comprehensive explanation of the research. It has been great pleasure and honors to be able to work under her direction to finish my research.

My deepest gratitude goes to Ts. Ahmad Kamarulzaman bin Othman who is my supervisor for this project, for giving full cooperation with my research. His willingness to take time out his busy schedule for reviewing my research and to share a wealth of knowledge and expertise, particularly in the computer science industry has been great help in completing my research.

I offer my special thanks to all of my family members. It would not be possible to write this case study without the support from them. I would like to thank my dearest father Mohamad Nizam, my mother Rodziyah, and my sister Nurul Najwa. It was indeed helpful to having family member who able to be understanding of my situation while writing this research.

Lastly, I would sincerely like to thank all my beloved friends who always supporting me through thick and thin.

May God shower the above cited personalities with success and honor in their life.

ABSTRACT

This study addresses the communication challenges faced by the deaf and hard of hearing community in Malaysia due to the scarcity of Malaysian Sign Language (MSL) interpreters. MSL, as the official sign language of the country, plays a crucial role in facilitating communication for individuals with hearing impairments. However, the limited availability of interpreters hinders effective communication. In response, this paper introduces an innovative approach utilizing Long Short-Term Memory (LSTM) neural networks for the recognition of Malaysian Sign Language. LSTM networks, recognized for their proficiency in sequence modeling tasks, are employed to discern the temporal correlations inherent in the hand movements constituting MSL signs. The proposed method is rigorously evaluated using a dataset comprised of MSL signs, incorporating metrics such as accuracy and confusion matrix analysis. The results demonstrate a notable precision in sign recognition, reinforcing the potential of the method to form the foundation for a real-time MSL recognition system. By leveraging the capabilities of LSTM networks, this research contributes to enhancing accessibility and communication for the deaf and hard of hearing community in Malaysia.

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