UNIVERSITI TEKNOLOGI MARA

A REAL TIME SIGN LANGUAGE ALPHABETICAL IDENTIFIER MOBILE APPLICATION USING IMAGE PROCESSING TECHNIQUE

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JANUARY 2019

ACKNOWLEDGEMENT

Alhamdulillah, praises and thanks to Allah because of His Almighty and His utmost blessings, I was able to complete this research within the time duration given. Firstly, my special gratitude to my supervisor, Mdm Noor Hayati bt Mohamad Noor who always there giving me guide toward the research. Special appreciation also goes to my beloved parents giving endless support in my studies and this research. Last but not least, to my dearest friends from CS251 who been there through thick and thin helping each other out in completing the research and giving endless support toward the journey.

ABSTRACT

Sign language is a native language for deaf people and hearing people need to learn it if they want to communicate with deaf people smoothly. Learning sign language in class for normal people is limited because most of the class are reserved for the people and it takes time to master in using it. Current mobile application that help in communicating does not do real time translating. In order to help normal and deaf people to communicate and cut the time in learning, direct translator shoud be develop instead of dictionary because people need to study it first before using it. In this project, it focus on translating the hand sign directly after the image is captured. The hand sign recognition that it will translate is the 26 alphabet in sign language which is A to Z. Technique that will use to recognize the hand sign is image processing technique. After the image is capture, it will detect the edge of the hand sign in the image using edge detecting technique and match with the database. Nowadays, Video Relay Service (VRS) is used as a manual interpreter and also online dictionary. There are many researchers work has been done to automate the process of sign language interpretation. Since camera technology get sophisticated, it will be use to test result of this project. It it hoped that this research could help other researchers for future research.

Contents

CHAPTER 1

INTRODUCTION

This chapter provides the background and brief description of this project and as well as the main subject of this project which is sign language alphabetical identifier. It starts with the project background and followed by problem statement, objective, scope and significance of the project.

1.1 Project Background

Sign language is used by the hearing-disabled people every day as the main communication language. It's a communication using gesture that translated visually. Based on a survey by Institute of Public Health, 21.57% of the population in Malaysia loss of hearing (Cheoh Siew Tin, 2014). Sign language are not copied from spoken languages, they have their own vocabularies and grammatical structures (Amira, Shazlina & Dahlan, 2016).

Malaysian deaf got help from Mr. Tan Yap in the early 1960s by introducing American Sign Language (ASL) and now he is called "Father of the Deaf" (Hurlbut, 1999). In Malaysia, Malaysian Sign Language (MSL) is used by the deaf communities. Different countries have discrete sign language of their own even sign fingerspelling in the written Roman alphabet will depend on where you are from, sign language naturally grow within hearing-disabled communities and not artificially given down to them (Priya Kulasagaran, 2014). Malaysian Sign language has different dialect based on the state, such as Penang Sign Language (PSL) and Kuala Lumpur Sign Language (KLSL). Malaysian Sign Language was introduced by Malaysia government and Penang Sign Language developed by deaf children outside the classroom (Ethnologue, 1996).