

**UNIVERSITI TEKNOLOGI MARA**

**ASSISTIVE TECHNOLOGY: SIGN  
LANGUAGE TRANSLATION  
APPLICATION FOR HEARING –  
IMPAIRED COMMUNICATION**

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## **STUDENT DECLARATION**

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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## **ABSTRACT**

Assistive Technology: Sign Language Translation Application for Hearing-Impaired is a stand-alone application that was developed to translate sign language gesture into a textual form. The sign language translation application was also integrated with a hardware called the Microsoft Kinect Camera Sensor. This hardware was used to detect the gesture of sign language that performed by the user who stands in front of the hardware. The sign language translation application implemented the algorithm called Dynamic Time Warping where it measured the similarity between two sequences, which was the recorded gesture stored in text file and the current gesture performed by the user in front of the hardware. The purposed of the sign language translation application was to help the normal people communicate with the hearing-impaired people. Furthermore, this application also can record new gesture to be added into the application library. The data of recorded gesture which consists of coordinate numbers will be stored in form of the text file. This application also can help the normal people increased their knowledge in sign language, so they have better understanding when communicating with the hearing-impaired people. The development of the sign language translation application used the System Development Life Cycle (SDLC) by implementing the waterfall model as the methodology. A user acceptance testing based on Technology Acceptance Model (TAM) was conducted with 30 participants of normal people from age 18 – 40 years old to see the acceptance of the application. The test has two parts, the first part was demographic questions and the second part was divided into four components and consists of 13 questions. Results obtained from the testing was positively accepted by most of the participants. Therefore, the proposed application proved can be beneficial to the normal and hearing-impaired people by improving the social interaction and also can motivate other developers to help contribute for more future projects to help the hearing-impaired people.

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