

Abstract

Sign language is the main tool of communication for people with hearing impairments. Communication is very limited and difficult to understand between normal people who do not know sign language, so an interpreter is needed. Where not everyone, even a few normal people, learns sign language, especially the Indonesian Sign Language System (SIBI). Motion Detection is an important subject in the field of computer vision, which is used by many systems. Today's Internet of Things is very helpful and facilitates daily human activities. An internet network allows a device to be controlled from a considerable distance. This study described a sign language translator tool for the deaf and speech impaired using a raspberry-pi camera and displayed it on the other device monitor. This system was built using the Python programming language and the OpenCV Library. The system is using Haar Cascade Classifier algorithm, where there will be data on all hand shapes based on the letters to be translated. This application uses the OpenCV library and Visual Studio Code IDE software connected to the Raspberry Pi Camera. The publisher will send data to other devices using the MQTT Broker to connect and display detection results to other device monitors wirelessly using a local network. The research was conducted at various distances between the hand and the webcam, from 30cm to 150cm. The research results using the Haar Cascade Classifier method to detect sign language obtained an accuracy of 82%.

Keywords: *OpenCV, Finger Detection, Speech Deaf, Haar Cascade Algorithm, Raspberry Pi, Python*
