

# INTERVIEW VIDEO CONFERENCING SYSTEM ASSISTED BY ARTIFICIAL INTELLIGENCE SIGN LANGUAGE INTERPRETER FOR DEAF PEOPLE

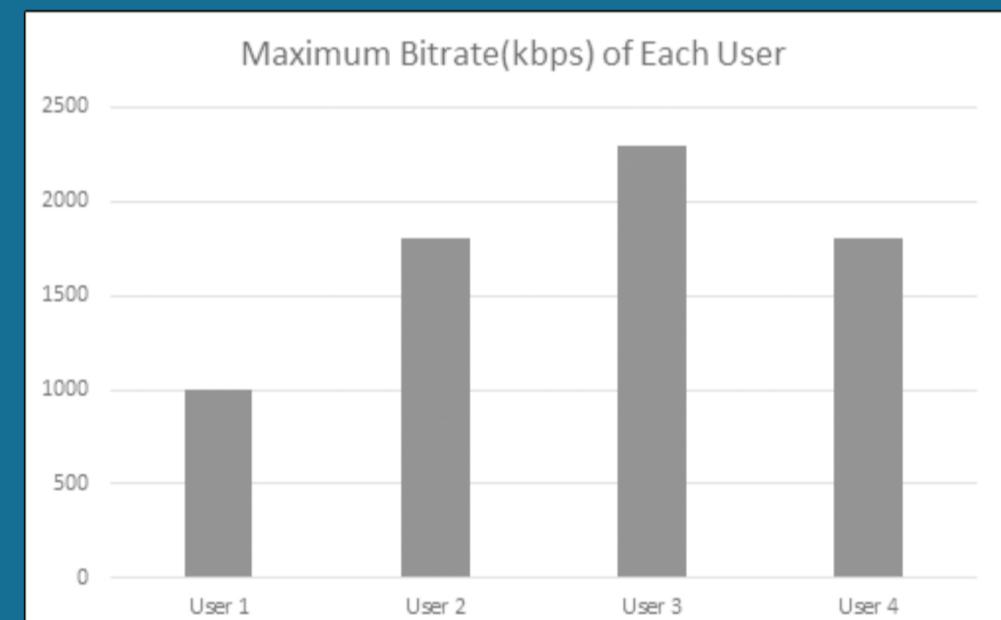
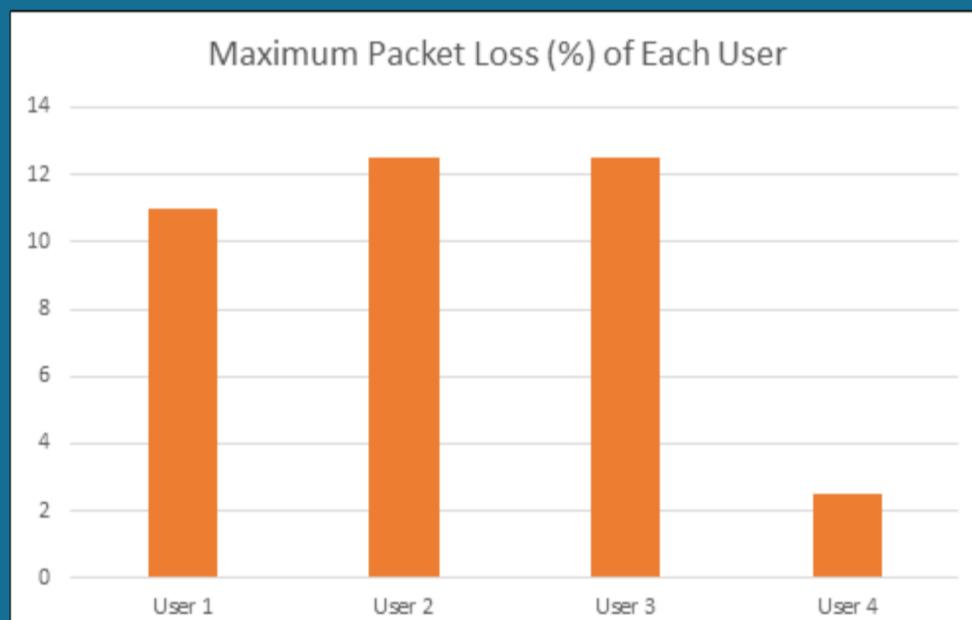
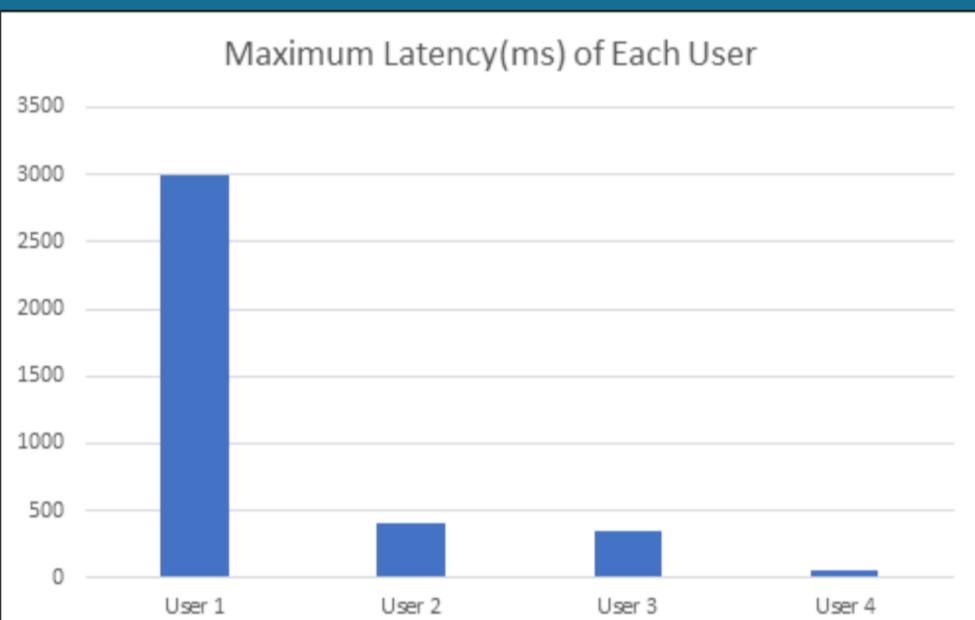
MUHAMMAD SHAFIQ BIN AHMAD RAZMAN

## INTRODUCTION

Video Conferencing is a common system that we used. Through it we can communicate with other people face to face with real time interactions in a distance. However, deaf people are having trouble with communicating with other people in a distance who did not understand sign language. There are several Artificial Intelligence systems that can translate sign language into text. However, it is not integrated with the video conference yet. Hence, this project is implemented to integrate the two systems, video conference and AI system that translate sign language into text in hope that it will be enhanced the deaf people community live. Method used in this project is using K-Nearest Neighbour (KNN) machine learning algorithm to translate sign language gesture into text and Speech.

## METHODOLOGY

## RESULTS



## CONCLUSION

In conclusion, this project enables deaf people to attend a video conferencing interview. With proper images trainings, KNN image classifier can predict well with confidence of above 90%. After training phase, the deaf (interviewee) makes the sign language gesture and the predictions is broadcasted to the interviewers. The interviewers can ask questions by using the chat box in the system or using computer microphone to speak. The spoken words are then translated into words using Speech Synthesis. The words are also broadcasted to the other users. The deaf then read the questions and response back by using sign language. In relative to the objectives, all three objectives are achieved. The first objective is to design and develop a web-based system that can host a group video conference for an interview session. The indicator of this objective can be seen in functionality test where 4 people are attending an online interview session. The second objective is to implement a sign language interpreter algorithm that converts sign language into text and audio using Artificial Intelligence (K-Nearest Neighbour) algorithm and Speech Synthesis. As the result of the KNN algorithm and Speech Synthesis implementation, the KNN model succeed to translate the images to words and the translate words into audio. The third objective is to evaluate the network performance of the video conference latency, bitrate and packet loss.