

William Bacon

Project Proposal

For my capstone project, I'd like to try and bridge the communication gap between those who use American Sign Language (ASL) and others, specifically during live communication. Due to the relatively low number of ASL users, the people in charge of hiring ASL interpreters for live events generally do not know ASL themselves and have no way of accurately judging a candidate's abilities which can sometimes result in faulty translations. As a stepping stone to solving this problem, I would like to build a tool that can translate the alphabet from ASL signs in real time.

Using MediaPipe's hand-tracker, landmark data will be collected frame-by-frame from streaming video. For each frame, the landmark data returned consists of 3D coordinates for 21 different points on the hand which will be used to create a labeled dataset. Using the 3D coordinates as predictors, the resulting model will stream input data and return a letter classification.

The final product will be an iOS app that streams input video and displays letter predictions to the screen. All of this should be doable with my laptop but due to the size of the dataset, may also require an external storage solution for the dataset.