



Tell us what your idea is.

Describe in 250 words what the feature or service will do and how you'll use Machine Learning to push the bar:

My idea resonates to the point of having an interface to act as a translator between two humans who are trying to interact with each other, one of whom has a disability and couldn't speak/hear/see but trying to communicate using sign language and other might or might not know sign language but can understand it using this app.

The app in real-time will try to convert the sign language put up by the person into a language understood by the other person in conversation. We will use the camera to capture the real-time footage and show the live caption and maybe we will also use audio to speak out the live captioned words after converting the sign language for other humans to understand.

This will help cater to problems the community of deaf and dumbs face in their life while they are trying to express their feelings/emotions but the other person is not well versed with sign language.

We will use ML to develop a model that will help convert the sign language into its equivalent form for humans to understand. We will train various models for converting the live camera footage to live caption, and recorded footage to live caption, particular images of a person posing a sign language to its equivalent form of the word.

Tell us how you plan on bringing it to life.

Describe where your project is, how you could use Google's help in the endeavor, and how you plan on using On-Device ML technology to bring the concept to life. The best submissions have a great idea combined with a concrete path of where you plan on going, which should include:

- *Currently, the concept is still at its idea stage only, but I have planned the implementation of the idea in the following manner.*
- *(1) Collect dataset for Sign language having multiple images of each sign and label the data in the dataset.*
- *(2) Do some data analysis and train a model using Tensorflow lite for using the model on edge devices such as an Android phone.*
- *(3) Test the model on an edge device.*
- *(4) Develop an android app having multiple activities or fragment each representing the use case.*
- *(5) Test the model by capturing the real-time images or videos and test if the output is as expected and improve the accuracy of the model*



- (6) Testing the Android app
- (7) Deploying it for a closed user group maybe as a beta testing app.
- (8) Finally, deploy it for general users and the deaf and dumb community.

Tell us about you.

Hi, my name is Aditya Yadav, a 22-years young fellow and a Computer Science Master's student from Thakur College of Science and Commerce, affiliated to Mumbai University. I'm an advanced beginner level Android developer and beginner ML and DL developer/engineer.

I'm very enthusiastic about learning new technology and exploring the same. I love traveling and this idea of me developing the "Sign-Gauge" app came into my mind while I was traveling and saw how difficult was it for people having some form of disability to communicate their feelings and emotions. This made up my mind to solve the problem and highly convinced about the fact that developers are problem solvers.

I'm also running a small community at my college to help them learn new concepts of Android, Java, etc, and planning to teach my students community to learn new technology which is generally not taught in our academics and we lack these latest technological skills.

My future plan is to do research in the field of disability and provide an easy access solution to problems these communities face, I also would like to revolutionize the education systems through community-driven programs to cater to the education affordability problems of the rural people who generally have a hard time not having access to good quality of education either due to financial condition or inaccessibility for the same.

Next steps.

- Be sure to include this cover letter in your GitHub repository
- Your GitHub repository should be tagged #AndroidDevChallenge
- Don't forget to include other items in your GitHub repository to help us evaluate your submission; you can include prior projects you've worked on, sample code you've already built for this project or anything else you think could be helpful in evaluating your concept and your ability to build it
- **[The final step is to fill out this form to officially submit your proposal.](#)**