



Bilkent University  
Department of Computer Engineering

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# Senior Design Project

## User Manual

*Project: Signify*

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## **1. Getting Started**

### **1.1. What is Signify?**



Signify is a bidirectional translation application to aid hearing/speech impaired people in their daily lives and provide a straightforward communication. It translates American Sign Language (ASL) to an English sentence, and English sentence to ASL.

Signify provides both in real-life and online calls translation service along with many other features.

### **1.2. System Requirements**

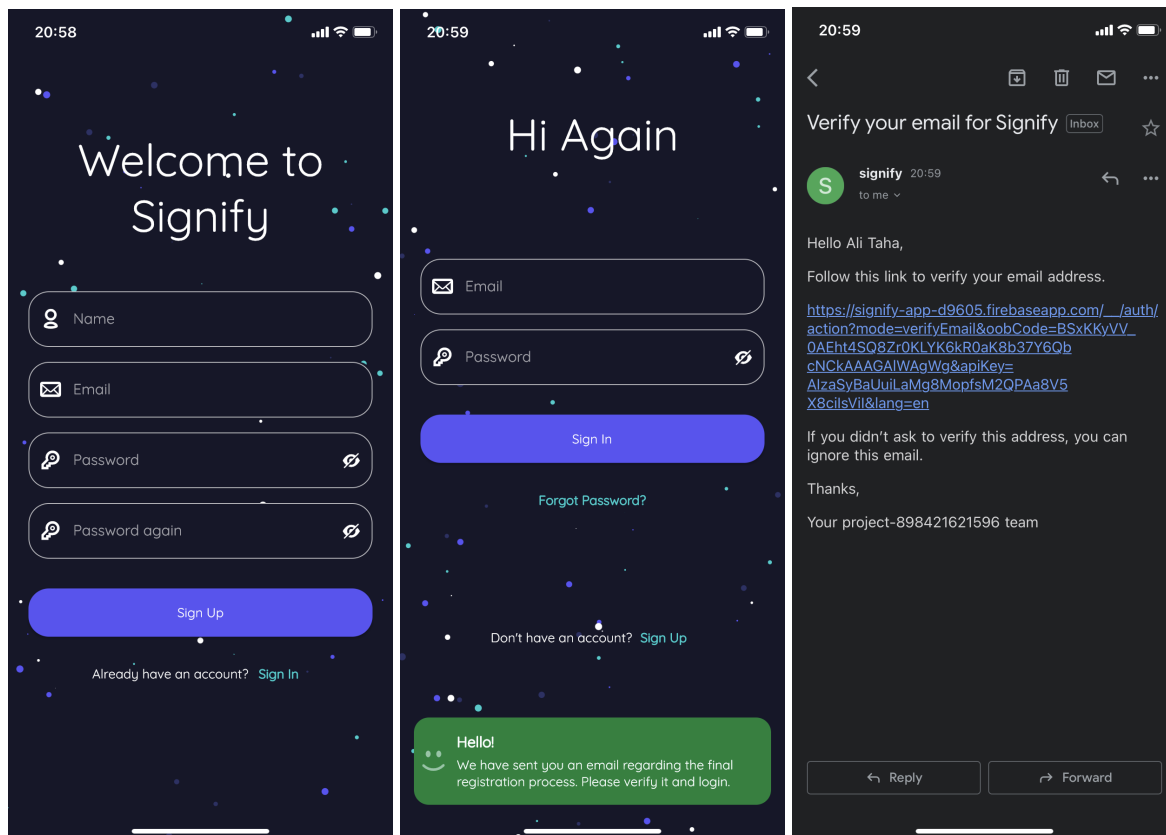
Signify is a mobile application for ASL translation. You need to have working camera and microphone. Additionally, Signify can work both on Android and iOS. For Android, you need to have at least SnapDragon 845 processor and for Apple, you need to have at least Apple A9 processor. To run the application easily, minimum 2GB of free RAM is highly recommended.

### **1.3. Download and Installation**

Signify is designed as a mobile application, available for both iOS and Android. After the release of the application, you can download from Google Play Store and App Store. However, it is not released yet, and the system is not open source, so, you need to wait for the release to install Signify.

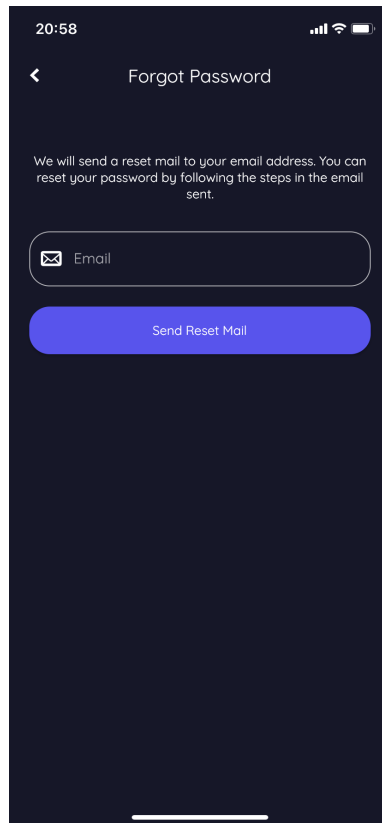
## 2. How to Use Signify

### 2.1. Sign Up and Sign in as First Step



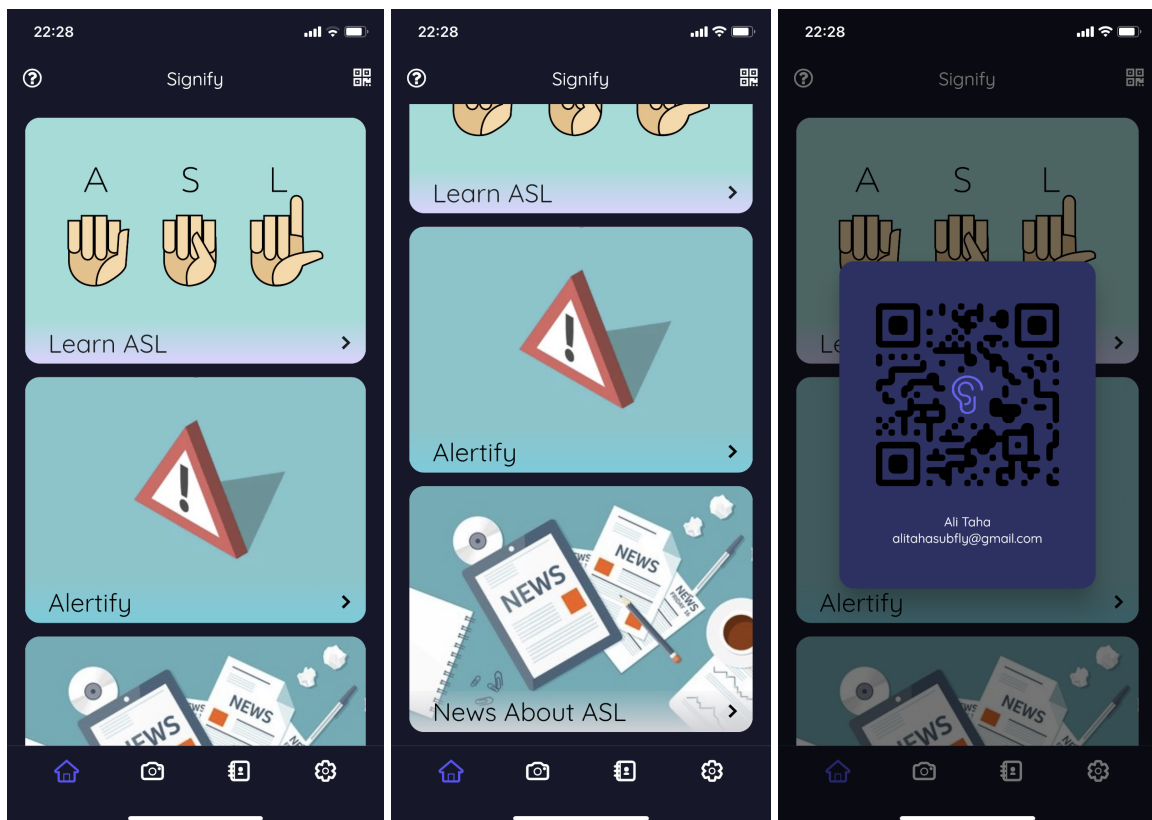
- ❖ After installing Signify, open the app. You will see the signup screen. Enter your name, e-mail, and password you want to use.
- ❖ Click the signup button. It will send you an e-mail for verification. Click the link given in the e-mail and verify your account. Then, you will sign in to your account using your e-mail and password.





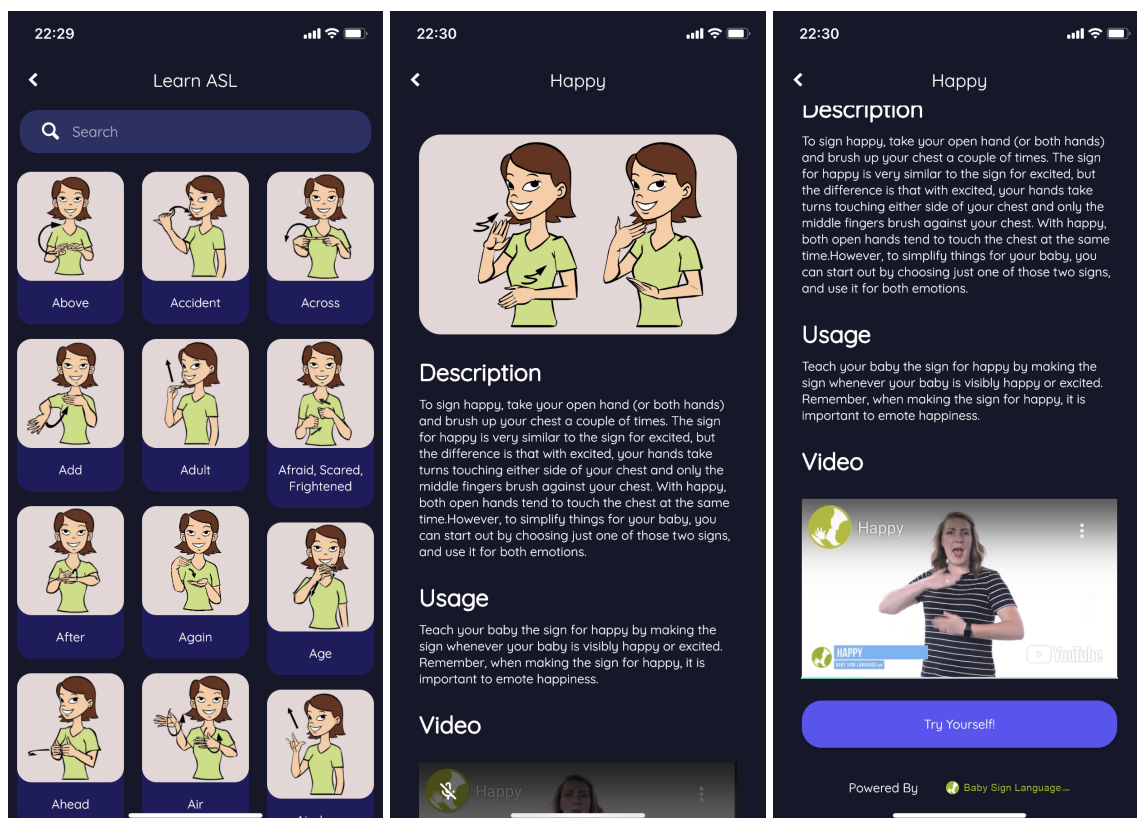
- ❖ If you forget your password, you can reset your password by sending an e-mail.

## 2.2. Home Screen



- ❖ The home screen contains different cards. You will see Learn ASL, See the Latest News, and Vibration cards on the screen.
- ❖ Below the home page, there is a camera button, which directs you to a real-life translation screen.
- ❖ The contacts button directs you to the contacts screen and the settings button provides custom settings for the user.
- ❖ On the upper right corner, there is a Qr code. It can be used when a friend is going to add you with qr code.

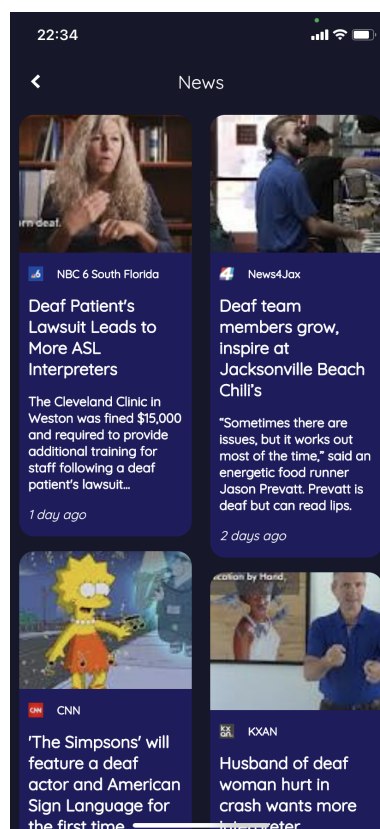
### 2.3. Learn ASL



- ❖ Learn ASL section is powered by BabySign. It contains 1079 words and their corresponding signs.
- ❖ You can see the list of signs and search a word from the upper search section.

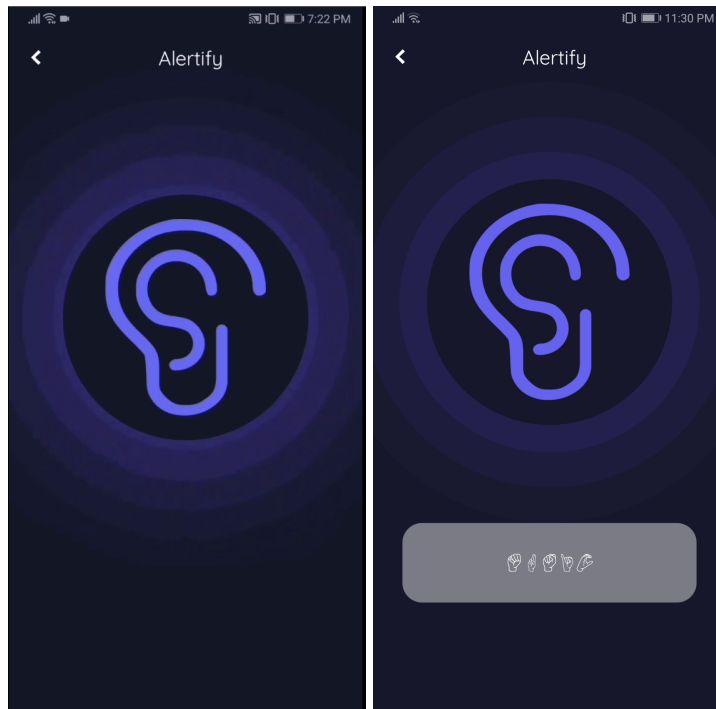
- ❖ After clicking one of the signs, you can see a detailed description, usage, and a video that teaches how to do that specific sign.
- ❖ You can also see the “Try Yourself” button below the description. It will open up a screen with the camera and lets you try the sign yourself. It will check your sign, and tells if you did the sign wrong or correct.

## 2.4. See Latest News About Sign Language



- ❖ You can see the latest news of the sign language community. By clicking on one of the news, you will be directed to the link provided.

## 2.5. Alertify



- ❖ Signify can also detect the sounds around you. If you go into the Alertify card and click the button, it will automatically detect the sounds, and sends a vibration according to the sound. Each sound detected, such as dog barking, car crash, etc., vibrates the phone and the sound type is seen on the screen.

## 2.6. Translation Screen

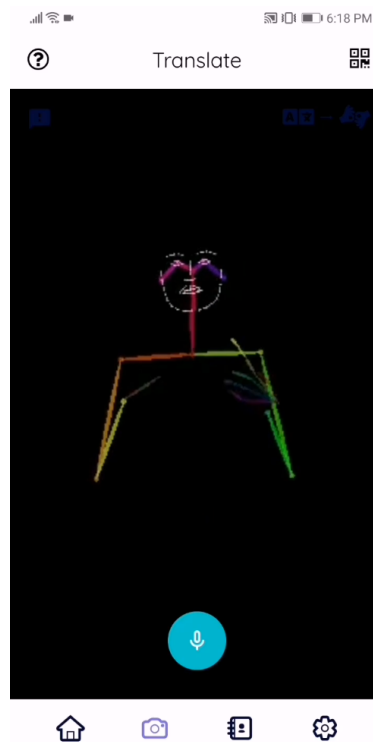
- ❖ The translation screen opens with a camera. You can change to the front or back camera by clicking the upper left button.
- ❖ To change the translation type, you can click on the upper right button.

## 2.6.1. Sign to Text Translation



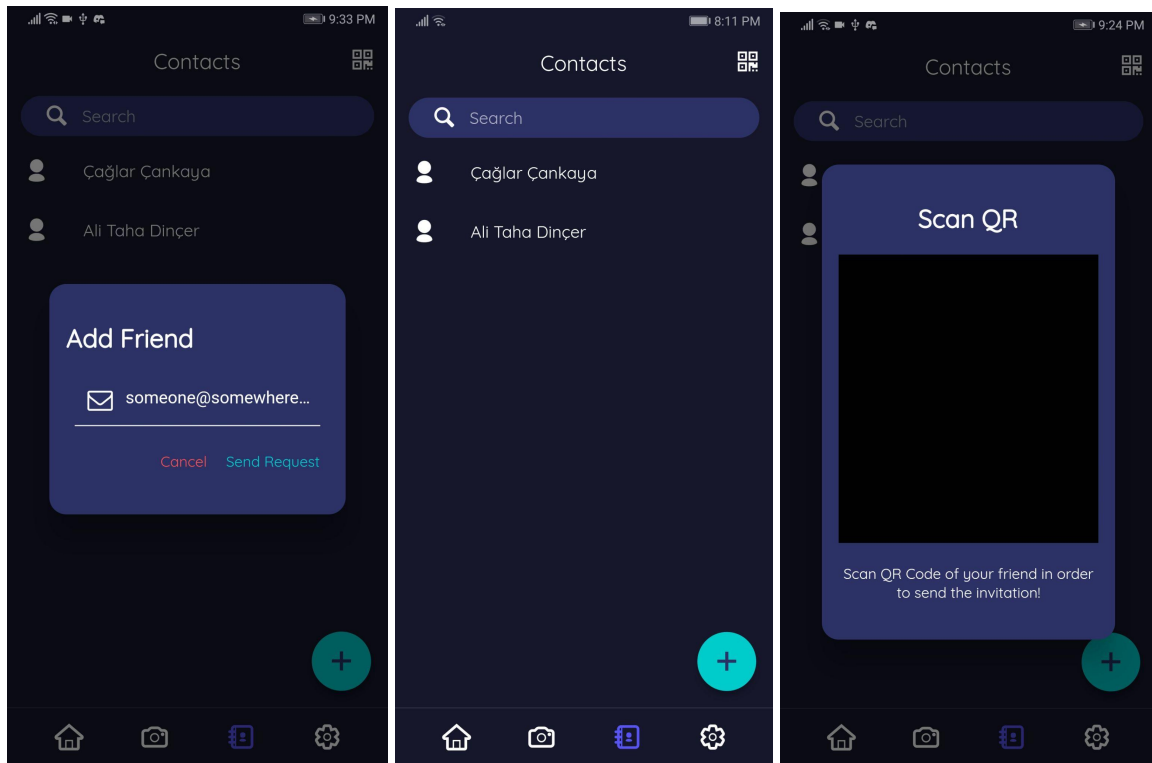
- ❖ For the sign to text translation, the user should click on the camera button in the lower right corner.
- ❖ After clicking, you have 3 seconds to do each sign and a countdown will be shown top left corner. After 3 seconds, you can do your next sign.
- ❖ Click the camera button again to stop signing.
- ❖ The translated sentence will appear on the screen, now you can switch the translation type to listen to the other person.

## 2.6.2. Speech to Sign Translation



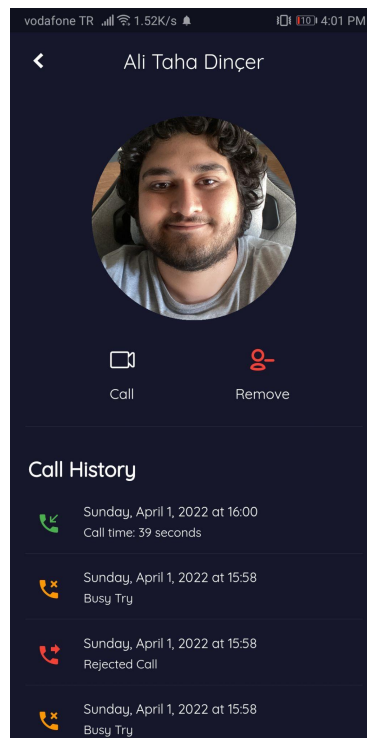
- ❖ For speech to sign translation, the user should click on the microphone button.
- ❖ After clicking, speak to the phone, and click to the microphone again to finish your sentence.
- ❖ A translated signing skeleton will appear on the screen.

## 2.7. Contacts Screen



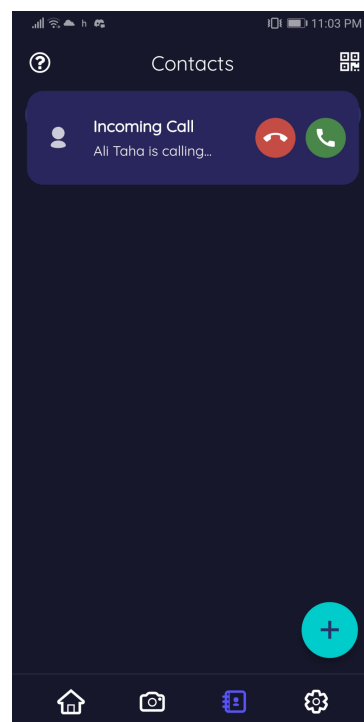
- ❖ You can add your friends to call them. In contacts screen, you can see already added friends and add more by clicking on the plus sign on the lower right corner.
- ❖ You can also see your Qr code on the upper right corner of the screen. If one of your friends wants to add you by scanning your Qr code, click there and show it to your friend.
- ❖ You can add contacts either by scanning their Qr code or entering their e-mail addresses.
- ❖ An invitation will be sent to your friend after you add him/her.

## 2.7.1. Friend Profile



❖ You can see the profile of your friends and the previous calls will be also shown here.

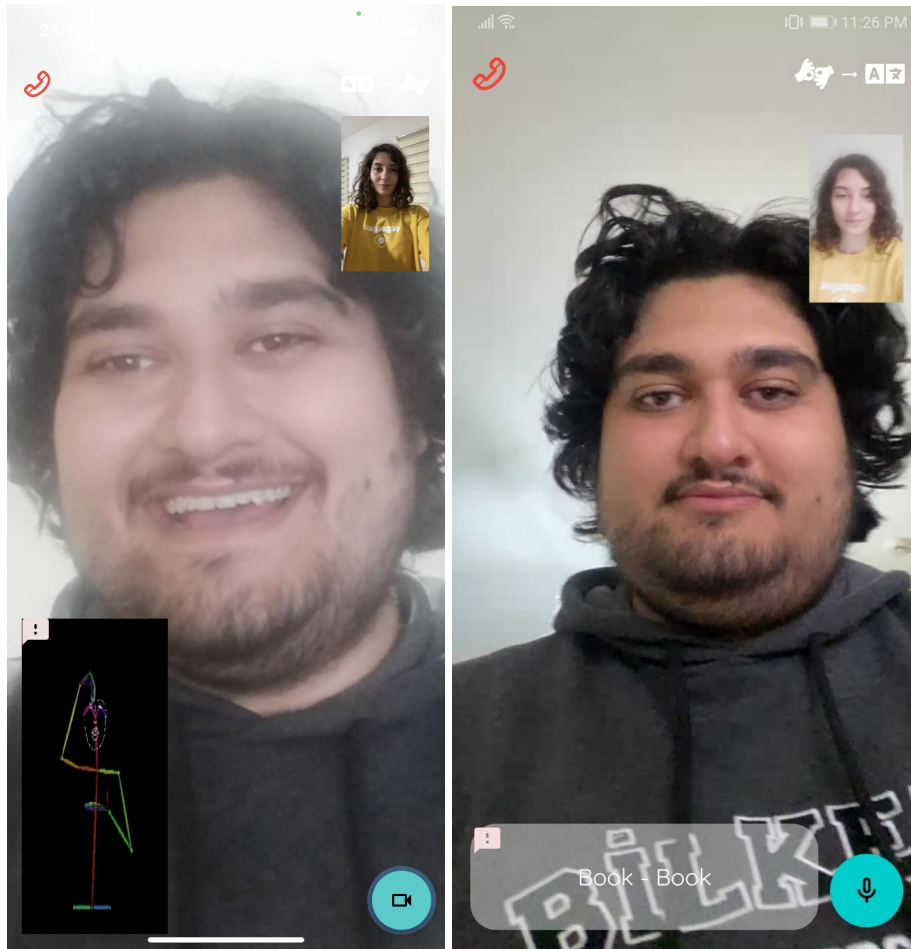
## 2.8. Call Screen





- ❖ You can call your friends either from the Contacts screen, by swiping their names right and clicking the call button that appeared. You can also call them by clicking on their names, and from the Friend Profile, clicking to the call button
- ❖ A call will appear on the screen of the friend.

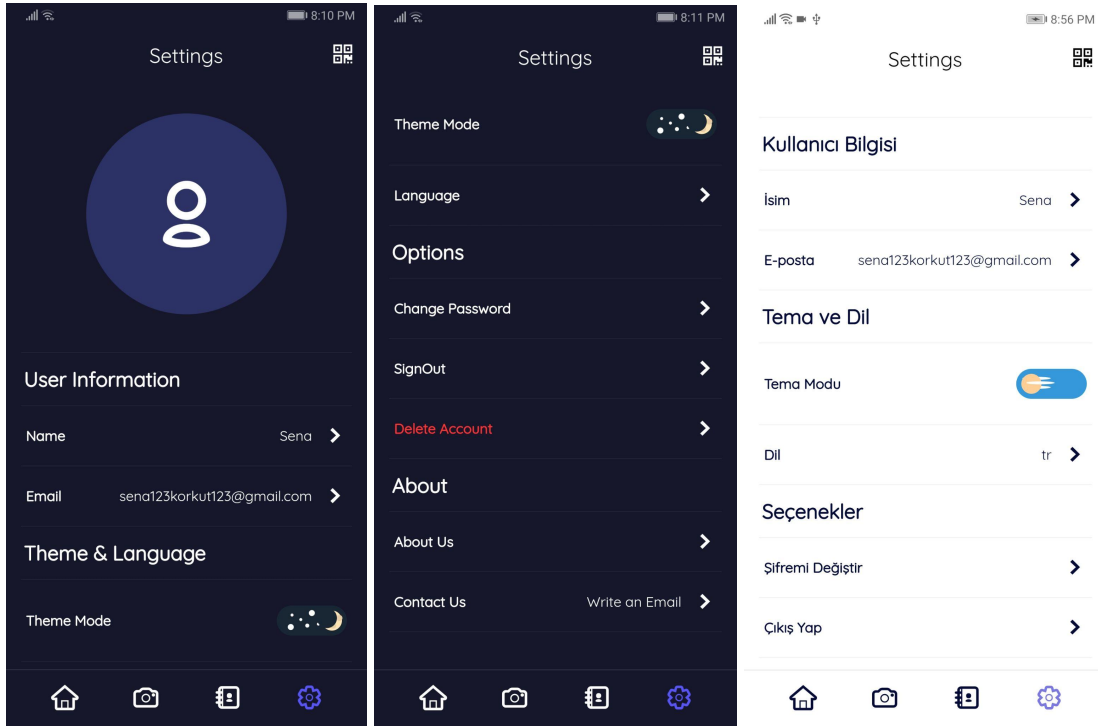
### 2.8.1. Translation in Call Screen



- ❖ Translation in the call screen works similar to the real-life translation screen. As an extra, both users' camera is on and there is a microphone for the user who speaks and generated sign language section for the user who signs.
- ❖ You can change who speaks and who signs by clicking on the switch button in the upper right corner.
- ❖ For the speech to sign part:
  - Click the microphone button and speak. When your sentence finishes, click again.

- Your voice will be processed, and translated skeleton model will start to play on the screen.
- ❖ For the sign to text part:
  - Click the camera button and do your signs. Similar to the real-life translation screen, there will be a countdown. You need to spend 3 seconds for each of your signs.
  - Your signs will be processed, and the translated text will appear on the screen.

## 2.9. Settings



- ❖ You can change your profile information and the settings of your application.
- ❖ You can change your name, given e-mail address, and profile picture.
- ❖ You can change the theme of the application. There are both light and dark modes.
- ❖ Signify also supports both English and Turkish language descriptions. You can change the language from the settings.
- ❖ You have the option to change your password, sign out from your account and delete your account.
- ❖ You can see the information about us and send an e-mail to contact us!