Women Elevate Program: Lab 4 – Explore Azure Speech Service with Speech Studio

Note:

- This lab uses Azure AI Speech Studio at https://speech.microsoft.com/.

- No login is required to access Speech Studio for this lab.

- Ensure your browser has JavaScript enabled and your microphone is set up for recording.

- The Azure Speech resource is assumed to be pre-configured for Speech Studio access.

Lab Overview: Azure Speech Service enables voice-driven applications through features like speech-to-text, text-to-speech, and speech translation. These capabilities support real-time transcription, language translation, and captioning, enhancing accessibility and user interaction. In this lab, you will use Speech Studio to convert spoken input to text, translate speech into another language, and generate real-time captions for a sample video.

This exercise takes approximately 25 minutes.

Lab Steps

Step 1: Launch Speech Studio

1. Open a web browser and navigate to Azure AI Speech Studio at https://speech.microsoft.com/

2. Verify that the Speech Studio main page loads successfully, displaying the available speech capabilities.

3. Ensure your microphone is connected and enabled for recording in your browser settings.

4. Verification: Confirm that Speech Studio is accessible without requiring a login and that the interface displays options like Speech to Text, Speech Translation, and Captioning.

Step 2: Perform Real-Time Speech-to-Text

1. In Speech Studio, under the Speech to Text section, select Real-time speech to text.

2. Verify that the default Azure Speech resource is selected or choose an available resource if prompted.

3. Click the Record button to start recording.

4. Speak clearly into your microphone for 5–10 seconds (e.g., say, "Hello, this is a test of Azure's speech-to-text service").

5. Click the Stop record button to end the recording.

6. Review the output in the text display area to see the transcribed text.

7. Verification: Confirm that your spoken words are accurately converted to text in the output.

Step 3: Perform Speech Translation

1. Return to the Speech Studio main page using the navigation menu (e.g., click the Azure AI Speech Studio logo or Back button).

2. Under the Speech Translation section, select Real-time speech translation.

3. Choose a source language for your spoken input (e.g., English) and a target language for translation (e.g., Spanish, French, or another language of your choice).

4. Click the Record button to start recording.

5. Speak clearly into your microphone for 5–10 seconds (e.g., say, "I am learning about Azure Speech services").

6. Click the Stop record button to end the recording.

7. Review the output to observe the translated text in the target language.

8. Verification: Confirm that the spoken input is accurately transcribed and translated into the selected target language.

Step 4: Explore Captioning with Speech-to-Text

1. Return to the Speech Studio main page using the navigation menu.

2. Under the Speech capabilities by scenario section, select Captioning with speech to text.

3. Choose one of the sample videos provided in Speech Studio (e.g., a demo video or presentation).

4. Play the sample video and observe the real-time captions generated by the Azure Speech Service.

5. Note the accuracy and timing of the captions as they appear alongside the video's audio.

6. Verification: Confirm that the captions accurately reflect the spoken content in the sample video and appear in real time.

Explore More:

- Try different languages for speech translation to test the service's multilingual capabilities.

- Experiment with other sample videos in the Captioning section to observe captioning performance.

- Explore the Text-to-Speech feature in Speech Studio to convert text input into spoken audio.

- Visit the API section in Speech Studio to view sample code for integrating speech capabilities into applications.