Words With Kinect

Speech Recognition

Abstract

   Speech Recognition in Words WIth Kinect empowers users to interact with the application by voice. It was designed for people who want to significantly limit their use of the mouse and gesture recognition while maintaining or increasing their overall productivity. The user can use voice commands to start and switch between screens and also they can launch the games. The Kinect sensor's microphone array is used as an input device for speech recognition-based applications.

   This feature also comes with the text-to-speech feature for the application that enables the voice feedback.

   The Kinect for Windows SDK beta from Microsoft Research is a starter kit for the development of speech recognition. It enables access to the Kinect sensor, and experimentation with its features. In order to develop the speech recognition feature, the following components are installed:

- Microsoft Speech Platform – SDK (x86 edition)
- Microsoft Speech Platform – Server Runtime (x86 edition)
- Kinect for Windows Runtime Language Pack

Implementation
- Create the required instances
    - Speech Synthesizer instance
    - Kinect Sensor instance which actives Kinect sensor
    - Speech recognition engine instance using audio data from Kinect.

- Gets the metadata for the speech recognizer (acoustic model) most suitable to process audio from Kinect device.
- Handler for recognized speech events.
    - Set the speech confidence threshold. If the the speech utterance confidence gained form the sensor is below the speech confidence threshold the speech is treated as if it hadn't been heard
    - Implement the events when the speech is recognized
    - Implement the Speak Completed Event

Requirement Of Function

A ready sensor
- If the light on the sensor is green, the sensor is connected and ready to go.

Good sensor placement
- Place your sensor at least 1ft (.3 m) from any speaker. At louder TV volumes, the user may need to have up to 3 feet (.9 m) or more between the sensor and any speaker.
- Avoid positioning the sensor in direct sunlight.
- Do not place the sensor on the console, other electronic equipment, or anything that vibrates.

Minimal background noise
- Try to eliminate outside and ambient noises.
- Keep your sensor away from wind noise, such as a fan or heading duct.

Clarity
- Speak clearly in your natural voice.

Words With Kinect Voice Commands List

Supported locales

Speech recognition is supported in the following locales and languages:

Locale	Language
Australia	English
Canada	English
Ireland	English
New Zealand	English
United Kingdom	English
United States	English

Future implementation

1. Add more options for the specific voice commands
2. Support other languages