Multilingual Speech Recognition using Python and Google Speech API (en)
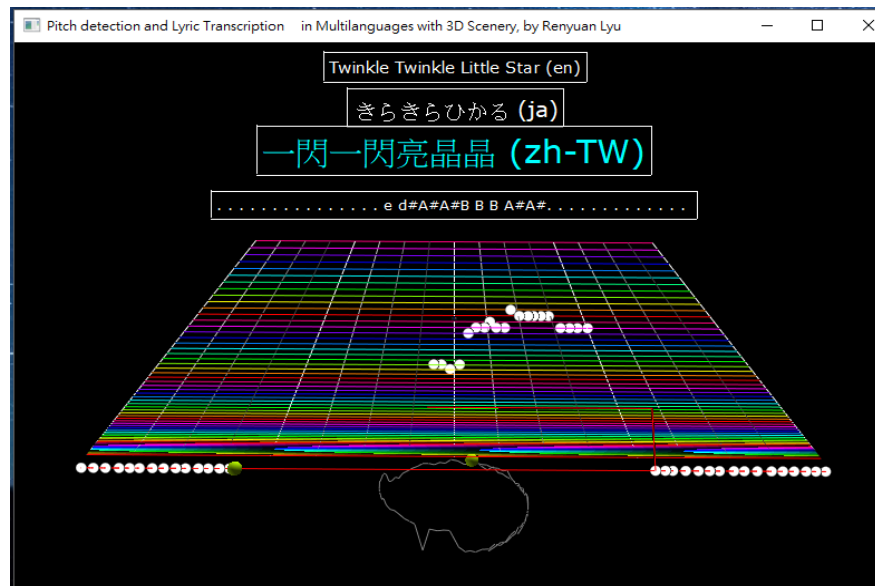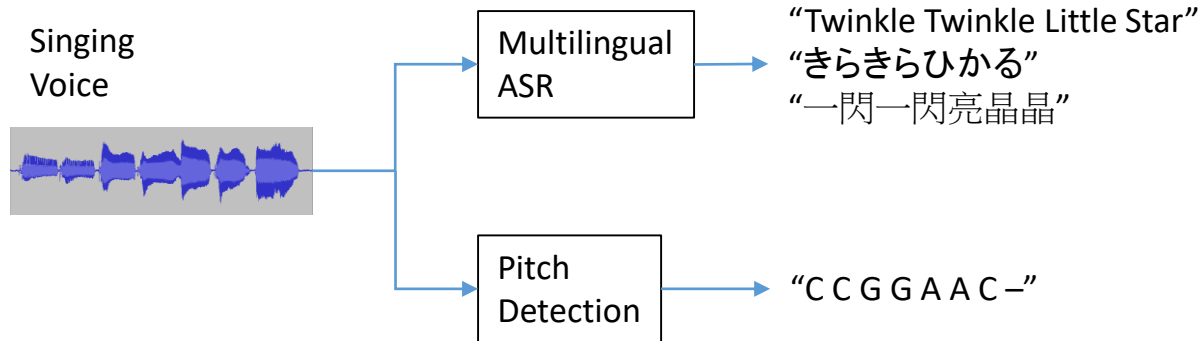
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- Speech Recognition has been more popular during the past decade since the appearance of Apple Siri.

- However, it is still a computationally expensive technology.

- This is why less programmers can use it fluently in their daily jobs.

- In this proposal, the speaker will share his experience in using Python SpeechRecognition module, which includes multiple speech recognition engines for online applications in games, linguistic tutoring and the other applications, such as bilingual translation and so on.

- The speaker will invite the audience to test the real-time system in multiple languages, such as English, Japanese and Mandarin Chinese.

Singing
Voice

Multilingual
ASR

"Twinkle Twinkle Little Star"
"きらきらひかる"
"一閃一閃亮晶晶"

Pitch
Detection

"C C G G A A C –"

```python
import speech_recognition
import visual
import pyaudio

import numpy
import threading

import ryF0Estimate000
```

https://pypi.python.org/pypi/SpeechRecognition/
http://vpython.org/
https://people.csail.mit.edu/hubert/pyaudio/

```python
class Ry音類: # the AudioClass

    def start(self):

        self.錄音線.start()     # recording_Thread
        self.能量線.start()     # energy_Thread
        self.基頻線.start()     # F0_Thread
        self.語音辨認線.start() # ASR_Thread
```

```python
def 語音辨認(self):

    辨= sr.Recognizer()
    while self.語音辨認中==True:
        #
        # Get x as "singingVoice" to be 音
        #
        音= sr.AudioData(x, self.取樣率, self.樣本寬)

        #
        # Do ASR to get recognition Result as 文
        #
        try:
            if    lang=='ja':
                文= 辨.recognize_google(音, language='ja')
            elif lang=='en':
                文= 辨.recognize_google(音, language='en')
            elif lang= 'zh-TW'
                文= 辨.recognize_google(音, language='zh-TW')
            else:
                self.文= '{} ({})'.format(文, lang)
        except:
            self.文= 'exceptionOccurs!!'
            pass
    return
```

Singing Voice

Pitch Detection

Multilingual ASR

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