Transformation of voice

A Midsummer Night's Voice

黄章学
贾帆
孔祥睿
JIA WEI LEE

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Project summary

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- Nowadays, Voice changers are commonly used in our daily life by changing a voice into another one according to related methods such as changing its tonality.

- In order to find out how this process work and develop our python skills, our group decides to make our own Voice changer. Through this project, we have collected related information from books and Internet, imported many kinds of useful packages and finish the code on our own. In the end, we finished our demo and it basically reaches our requirement.

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Summary of our method

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- import microphone and record the voice
- read and save of WAV document.
- deal with byte datatype
- learn some relating acoustic knowledge
- how to shift the pitch of voice
- transformed the data back to voice
- construct a visual platform

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Details and principles of our project

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01 Collecting(Recording)

How to pickup the voice and save as a wave file.

02 Voice Transforming

How to change a male voice into female.

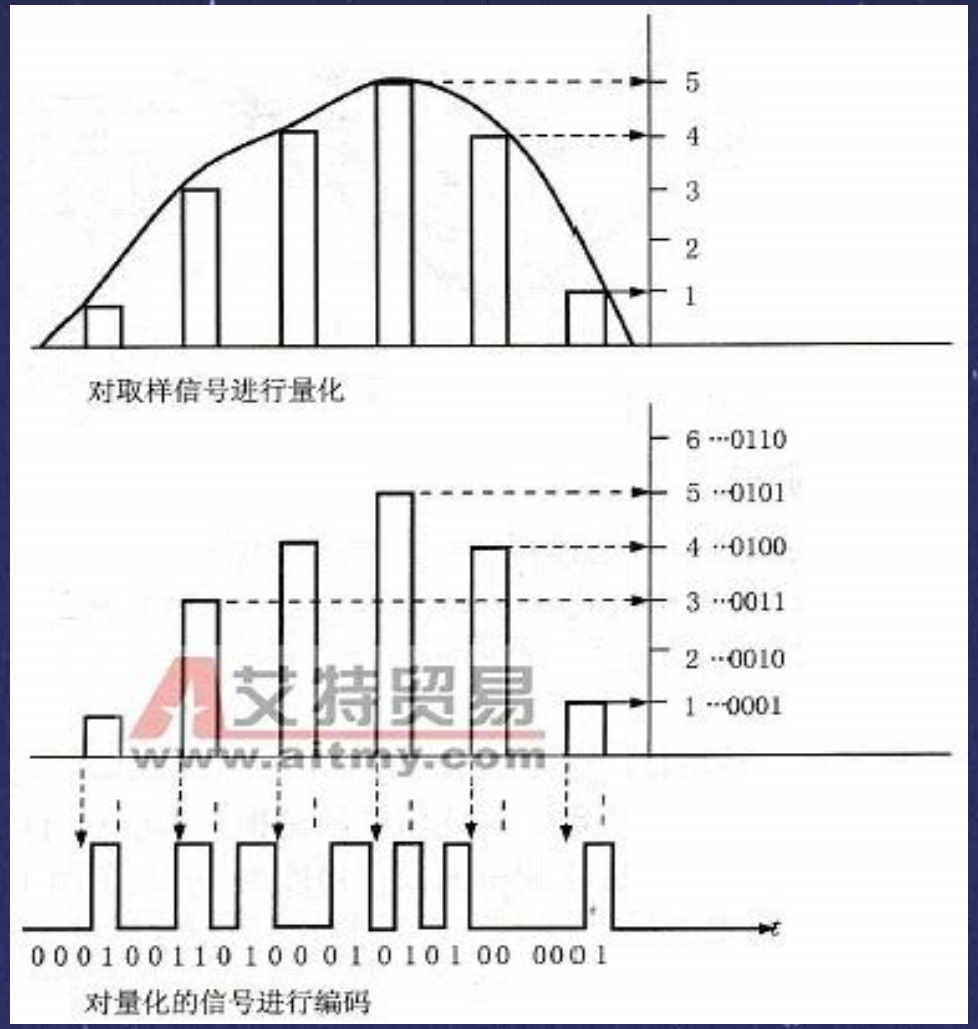
03 Playing and Visualizing

How to create a visual audio player.

To transform a voice to another, we have 3 main problems to face which are collecting voice, dealing with the sound (make a change) and playing it back.

Collecting(Recording)

- calls the microphone to pickup the voice
- Transform the analog signal of sound into a array.
- Encode quantified signals as binary data.
- Comparing with the threshold determines whether to continue recording.
- Save these data into the file



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Voice Transforming

Original Signal

Framing

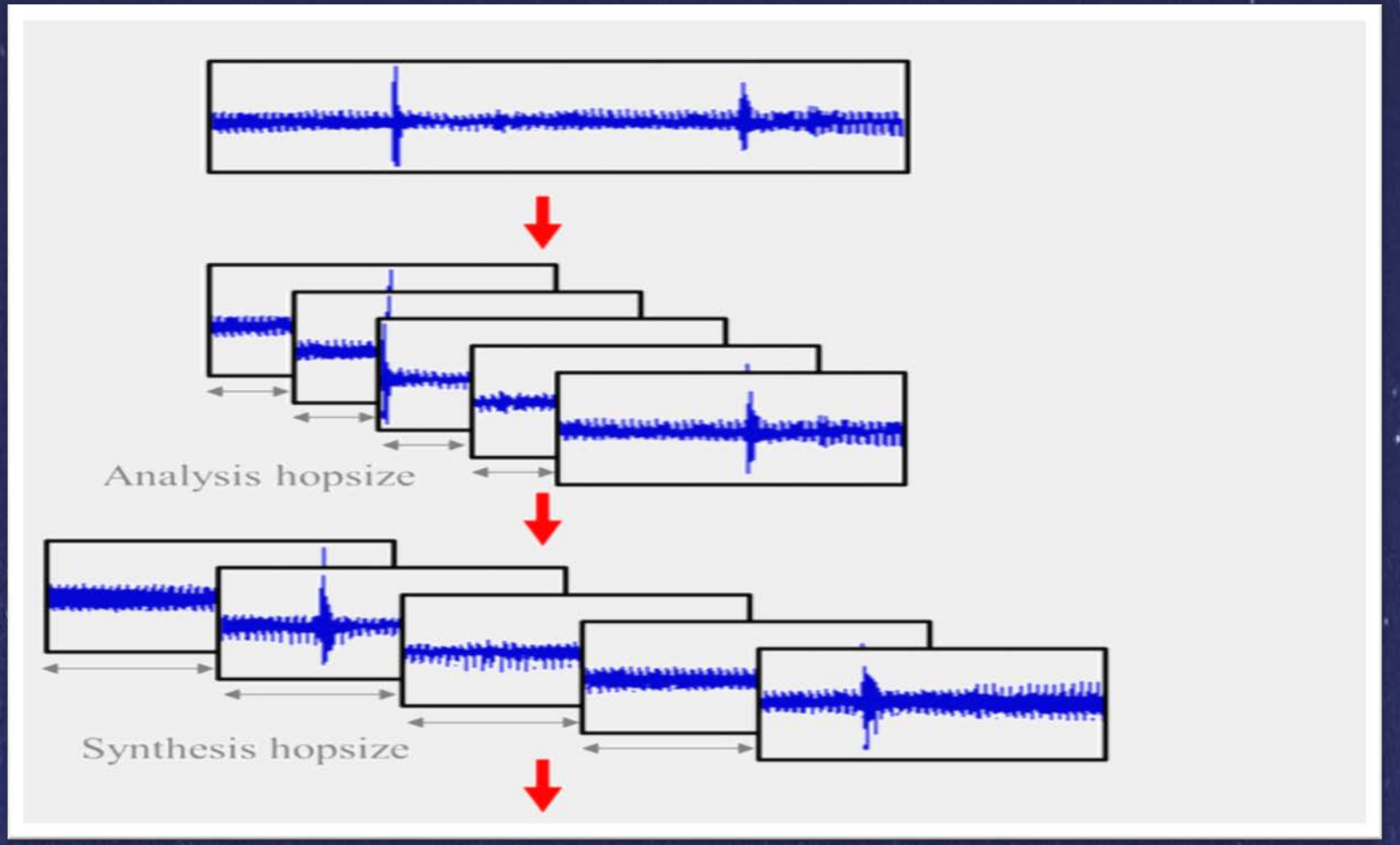
Analysis Frames

Frame relocation & adaption

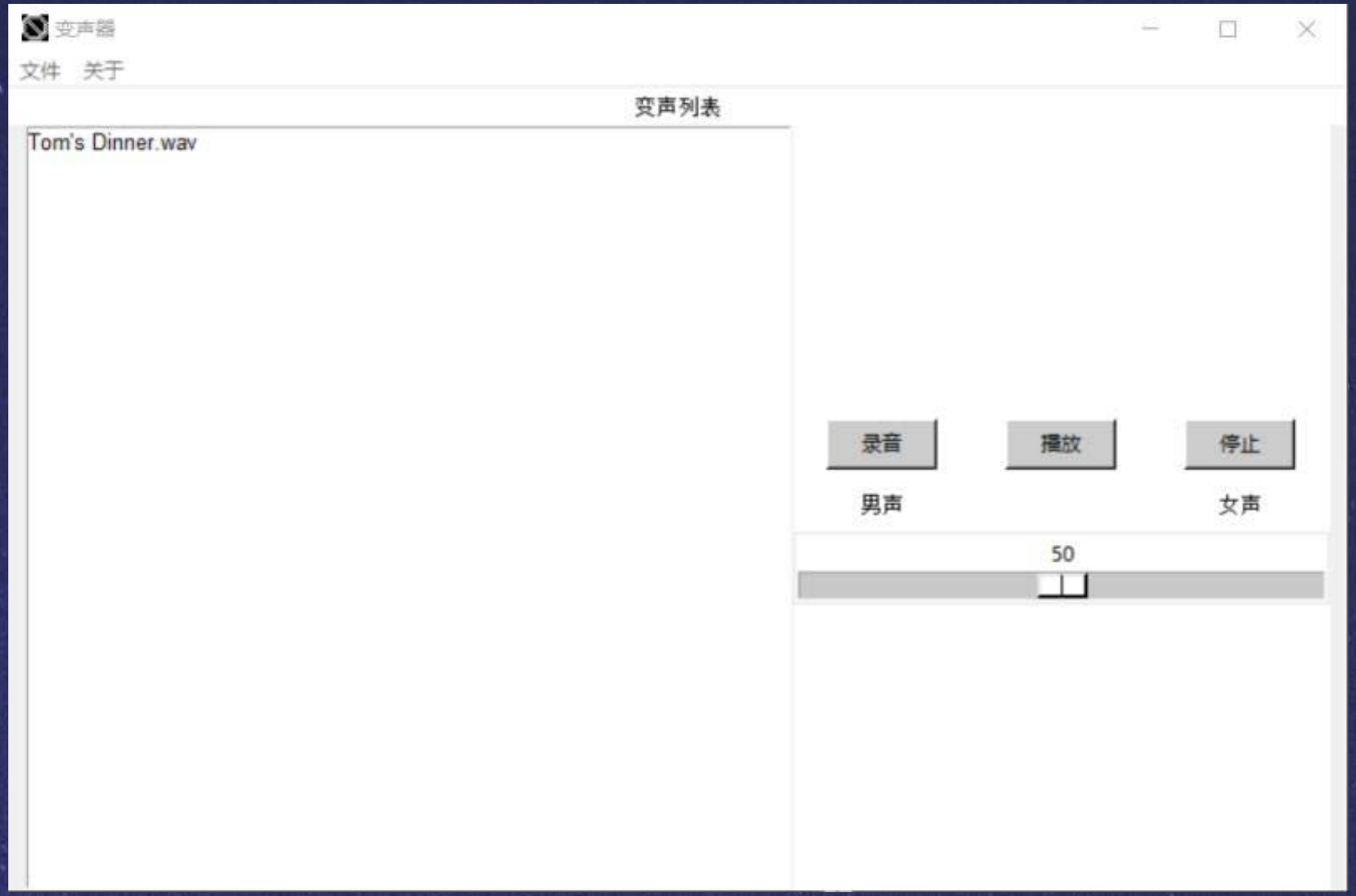
Synthesis frames

Signal reconstruction

Pitch-scale modified signal



Create a visual interface



The functions of visual interface

File

We can click the “文件” to open an audio file which is already in our computers.

Change bar

There is a change bar,whose aim is to control the extend of the voice change.

Quit

Click the “停止” button, and the voice will quit。

File	Record	Change bar	Play	Quit

Record

Click the “录音” botton, And then we can record a voice from ourselves or others.

Play

Click the “播放” button, and the changed voice will be on.

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Demo time

谢谢观看

THANKS FOR WATCHING