DPS HW2-2 資工碩一 r07922003 劉濬慶

1.ㄌㄠ ㄅㄧㄝ ㄕ ㄐㄩㄝ ㄅㄧㄣ ㄌㄤ

2.ㄎㄞ ㄙㄚ ㄈㄢ ㄅㄧㄢ ㄨㄟ ㄩ ㄏㄙ ㄔㄨㄣ

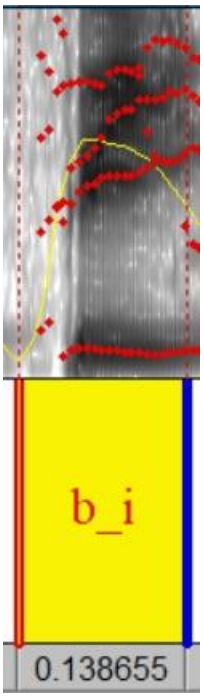
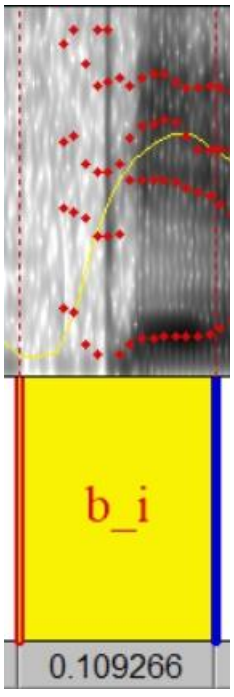
3.ㄅㄨ ㄕ ㄑㄩㄝ ㄈㄚ ㄅㄧㄠ ㄧㄢ ㄔㄤ ㄙㄨㄛ

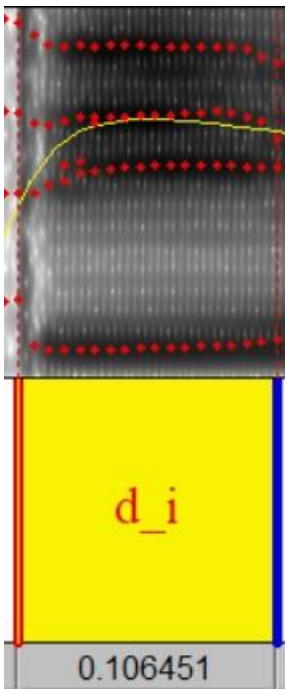
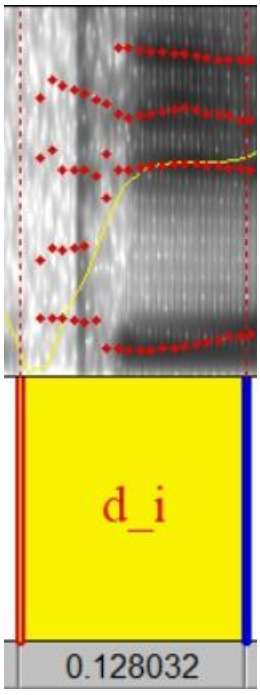
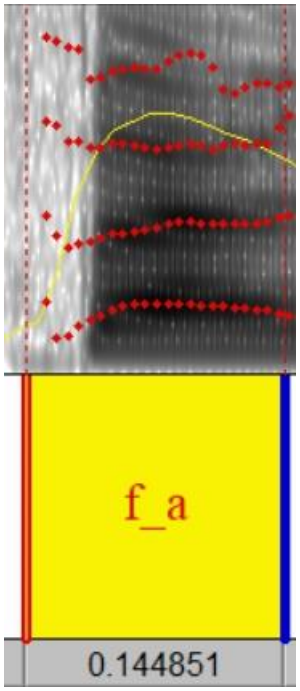
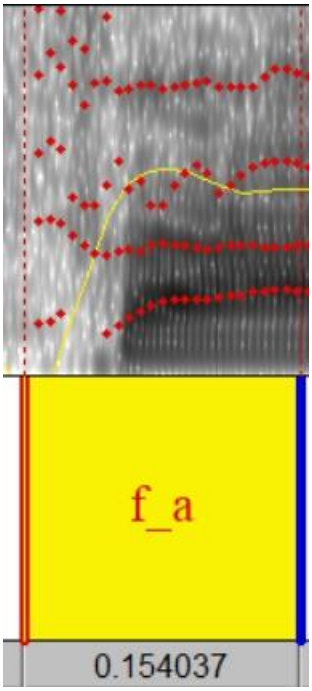
4.ㄏㄞ ㄋㄧ ㄐㄧㄣ ㄊㄧㄢ ㄏㄠ ㄇㄚ

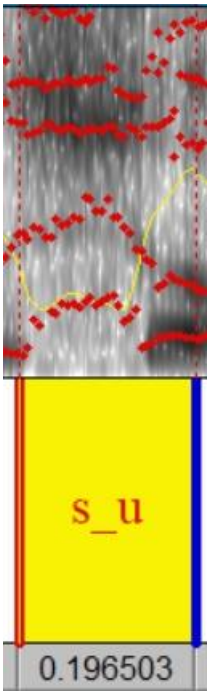
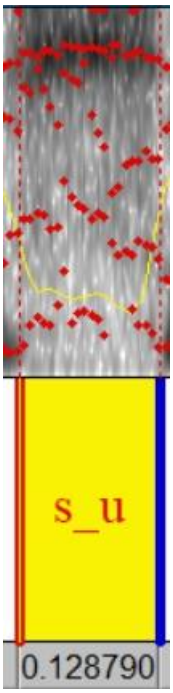
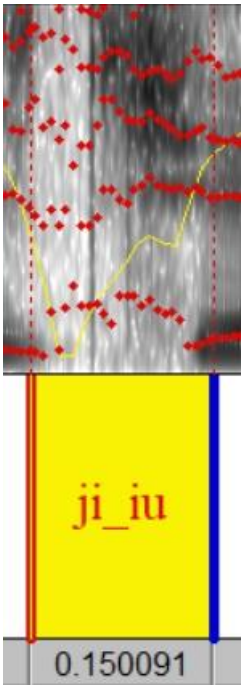
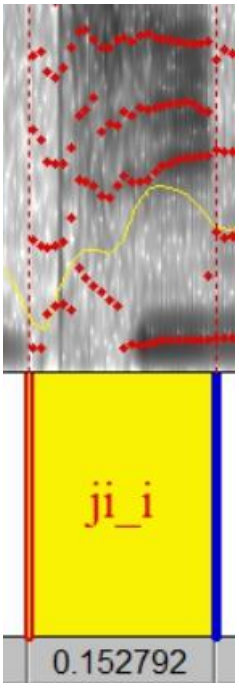
5.ㄅㄨ ㄧㄠ ㄌㄨㄛ ㄌㄨㄛ ㄙㄨㄛ ㄙㄨㄛ ㄅㄜ

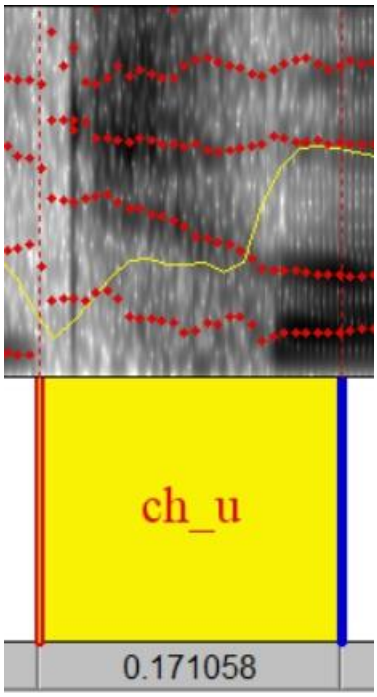
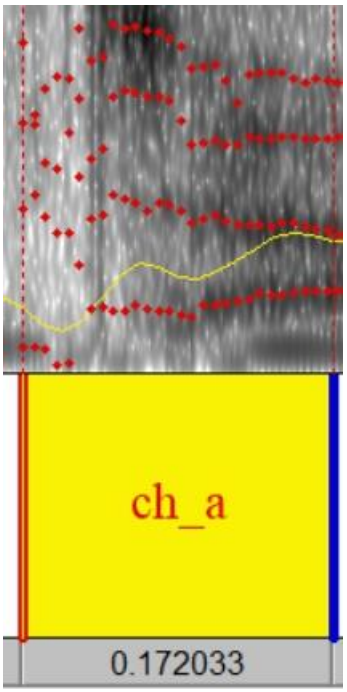
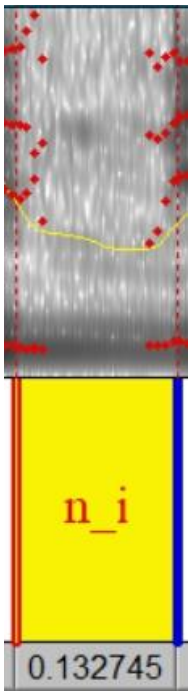
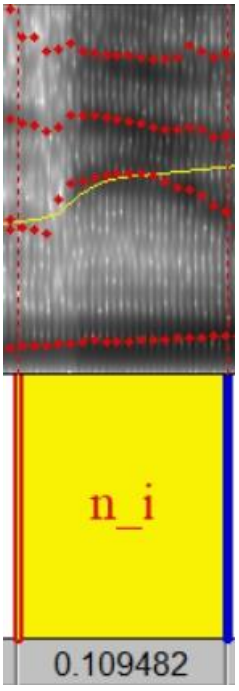
6.目前純種土黃牛大約剩下九百頭(太長省略注音)

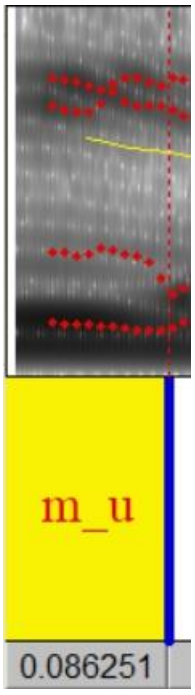
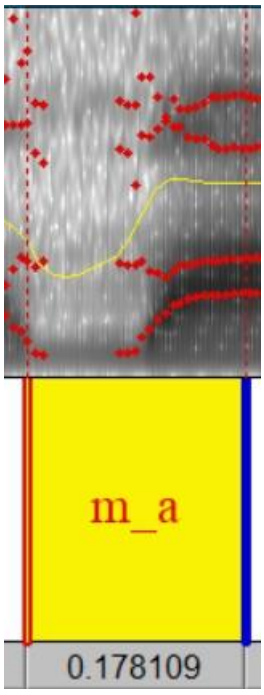
◆ Part2

Plosive	b[ㄅ]		

Plosive	d[ㄉ]		
Fricative	f[ㄈ]		

Fricative	s[ㅅ]		
Affricate	**Ji[ㅈ]**		

Affricate	ch[ㄔ]		
Nasal	n[ㄋ]		

Nasal	m[ㄇ]		

◆ Part3 Q1

Plosive

1. Intensity 都會從低到高
2. Formant 最下面的與下面數來第二條的差距會很大
3. Formant 從上面數來三條都比較密集
4. 發音的時間相較其他發音時間較短一點

Fricative

1. Intensity 的改變幅度大
2. 同樣的發音 Intensity 相似度大
3. 同樣的發音 Formant 有的會比較發散，有的會比較集中

Affricate

1. 發音的時間相較其他發音時間較長一點
2. Intensity 的改變變化是下~上~下~上
3. Formant 前面的紅點比較發散一點

- **Nasal**

1. 當 Intensity 往下的時候會沒有 Formant
2. 當 Intensity 平滑時 Formant 很規律以及密集
3. 同樣的發音 Intensity & Formant 可能差異很大

◆ Part3 Q2

- Boundary 算一點點 clear，由上面的 ji_iu & ji_i 和 ch_u & ch_a 和 m_u & m_a 的 Intensity & Formant 還看得出一些端倪不同
- RCD 的優點是:

右邊對左邊的影響力比較大，所以可以更精準的辨識正確的 Syllable

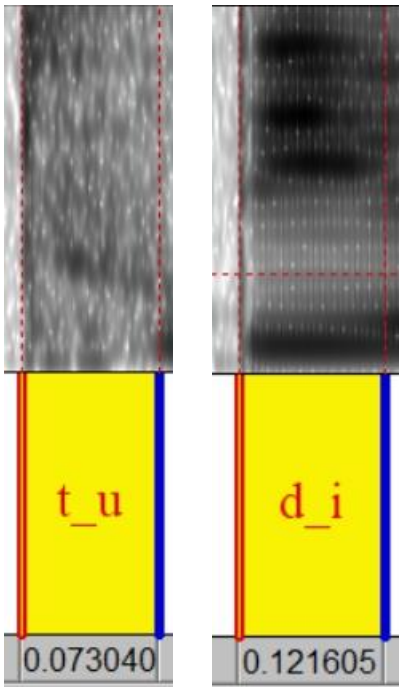
◆ Part3 Q3

Compare ㄅ&ㄊ:

ㄅ的 spectrogram 會比較深且是橫向發展的

ㄊ的 spectrogram 會比較淺且是直向發展的

下面有範例圖

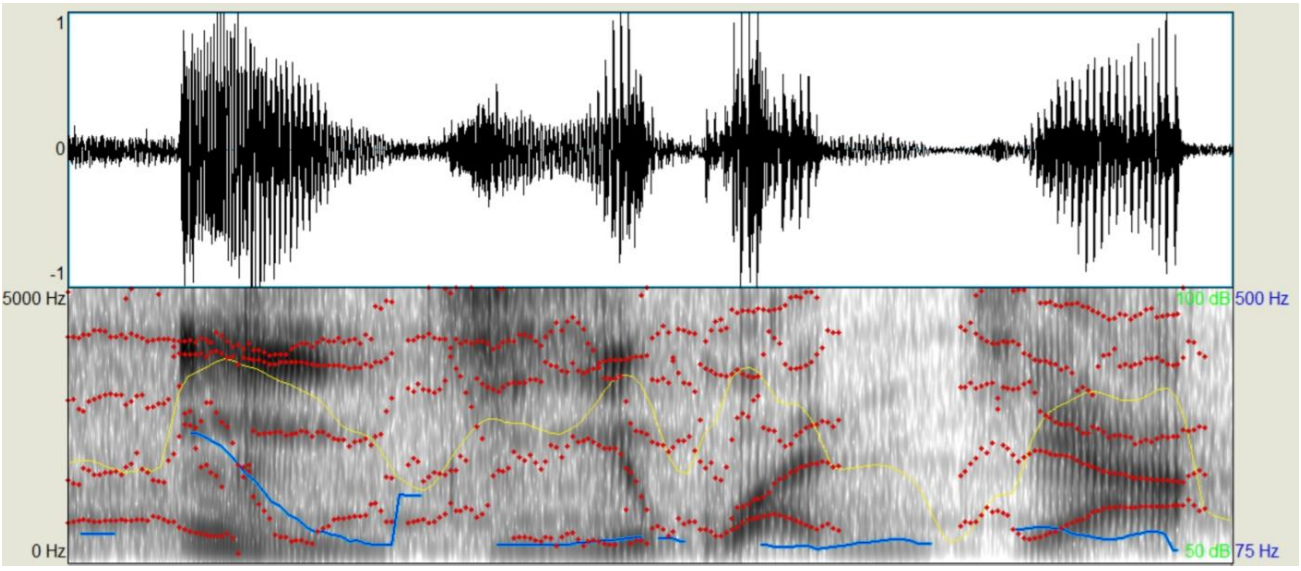


◆ Part3 Q4

有些 spectrogram 有明顯的深淺、紋路、深淺區塊的變化

就容易分辨 initials from finals

◆ **Bonus**



Plosive (ㄊ) – Fricative(ㄈ) – Affricate (ㄐ) – Nasal (ㄋ)

1. Plosive (ㄊ)前段的 Intensity 從低到高幅度成長明顯，以及

spectrogram 明顯淺深變化因此判定為 Plosive

2. 因為第二段的 Intensity 有上下起伏所以判斷為 Fricative
3. 因為第三段的 Intensity 從下上波盪所以判斷為 Affricate
4. 最後一段的 Intensity 比較平滑沒有起伏故判斷為 Nasal