# VG | Part A: Hard cases for Speech Recognition: CASE STUDY

1. Reflect on the following:
    - Can you think of any names for fictional places, people or objects that are not recognized? (Keep your final project in mind!)

```
"the idol": { person: "Menzi Idol"},
"menzi": { person: "Menzi Idol"},  // nickname: very difficulty
"menzi idol": { person: "Menzi Idol"},
```

```
"the kid": { person: "Kodi Grand Hotel"},
"kodi grand hotel": { person: "Kodi Grand Hotel"},
"kodi": { person: "Kodi Grand Hotel"},
"the magician": { person: "Kodi Grand Hotel"},
```

```
"dreamons": { person: "dreamons" }, // it is an invented word. it finds out something different
```

    - Did you come across any real locations or people that are also just not picked up?

```
"but so, you are a bastard": { person: "Menzi Idol" }, // it doesn't work because it is censored *******
```

```
"so for the dessert we have tiramisu": { person: "Kodi Grand Hotel" }, // dessert close to research , tiramisù should be tiramisu
```

    - Any specific accent you are using that makes words difficult to process?

```
"the hierophant": { person: "The Hierophant"}, // difficult for pronuciation
```

2. Write some sample code to test the confidence scores in speech recogniton. Take a look at the confidence score with the help of XState's Visualizer (or you can log it). How good is it?

I will analise three different cases:

- **Nickname/unusual word case: "menzi"**
- **Error in pronunciation/very marked pronunciation case: "the hierophant"**
- **New word case: "dreamons"**

3. Think about how this problem could be solved. Why do you think recognition falters for the examples that you tried? **-> Part A-VG. Azure Custom Speech**

To solve the problem you will use Custom Speech:

- You will basically have to provide data, either plain text or audio files, to help the recognition process.
- Train and deploy your model (enable content logging). Note the **Endpoint ID**.ù

To test your model:

- Create a file `dm3.ts` which implements a very basic ASR test (analogous to `dm.ts` in this repository). Add the following to your `settings` object:
- `speechRecognitionEndpointId: "paste your Endpoint ID here",`

- Now you can test your new ASR model! You will be able to download the log files for your model in Custom Speech interface.

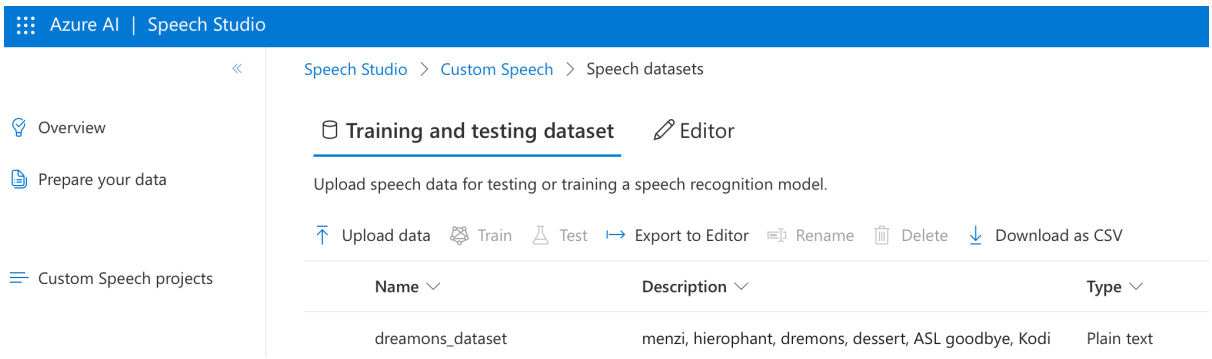
Extend the your report with the following information:

- Which new words are now supported and can be tested. Report should contain your Endpoint ID.

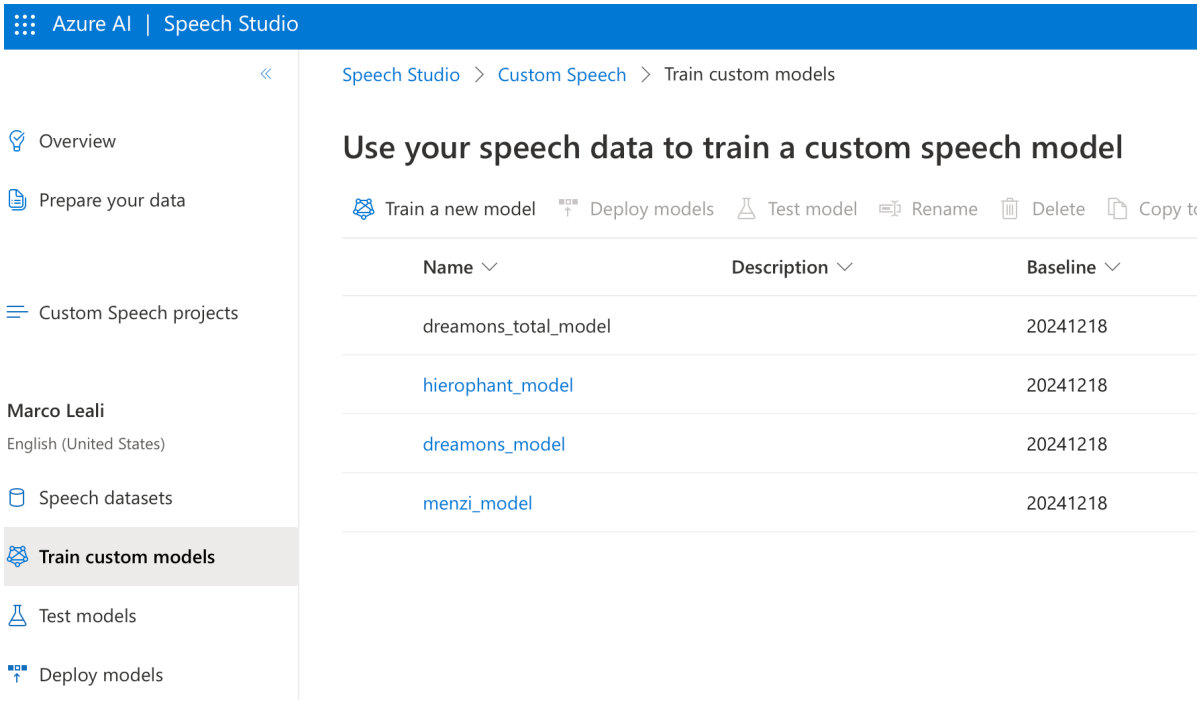
I used a txt file with 10 sentences for each of the critical words, in this report we analise just the first 3:

- menzi
- hierophant
- dreamons
- dessert
- ASL goodbye
- Kodi

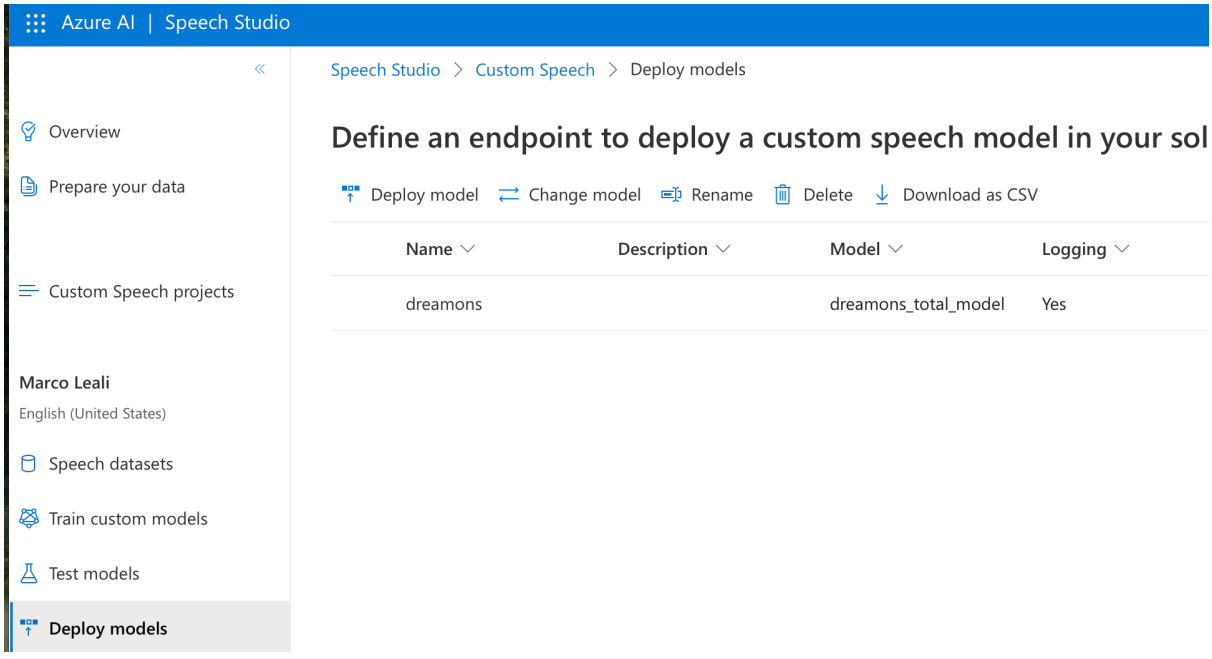
https://speech.microsoft.com/portal/8032a881d1714f93a1097e4d35d8b4a6/customspeech/78d41433-40a9-488b-92b9-fd3818f63a9c/data




Then:




And finally I got the endpoint copy and pasted inside the dm.ts file.

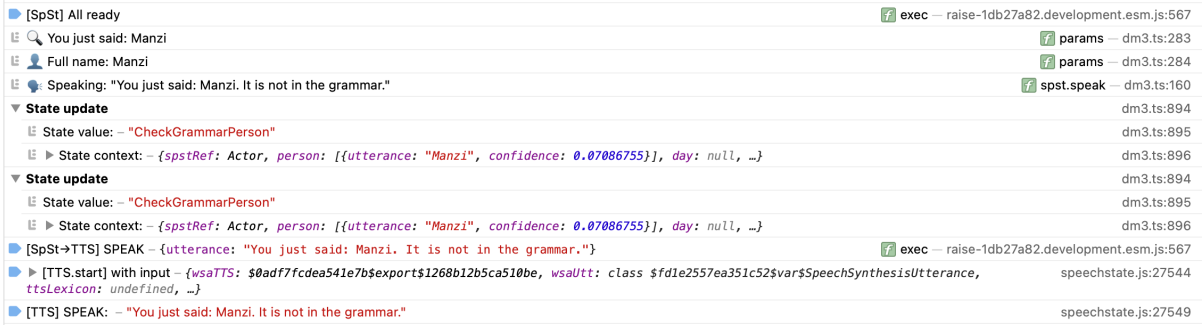



```
const settings: Settings = {
  azureCredentials: azureCredentials,
  azureRegion: "northeurope",
  asrDefaultCompleteTimeout: 0,
  asrDefaultNoInputTimeout: 5000,
  locale: "en-US",
  ttsDefaultVoice: "en-US-DavisNeural",
  speechRecognitionEndpointId: "c9cf0d8b-777e-479e-afdd-9d399383fe53",
};
```

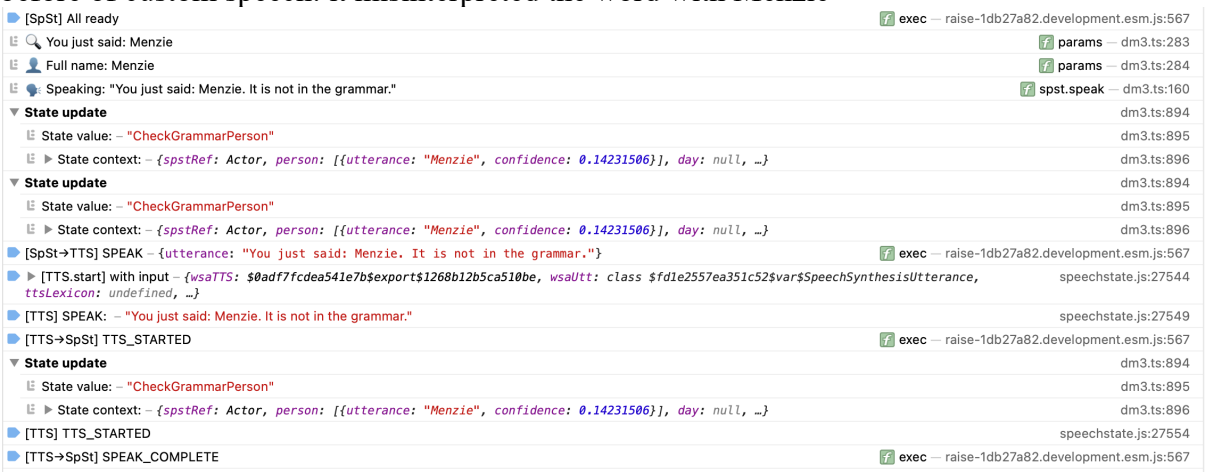
```
speechRecognitionEndpointId: "c9cf0d8b-777e-479e-afdd-9d399383fe53"
```

## 1 ) Nickname/unusual word case: “menzi”

before of custom speech: it misinterpreted the word with Manzi



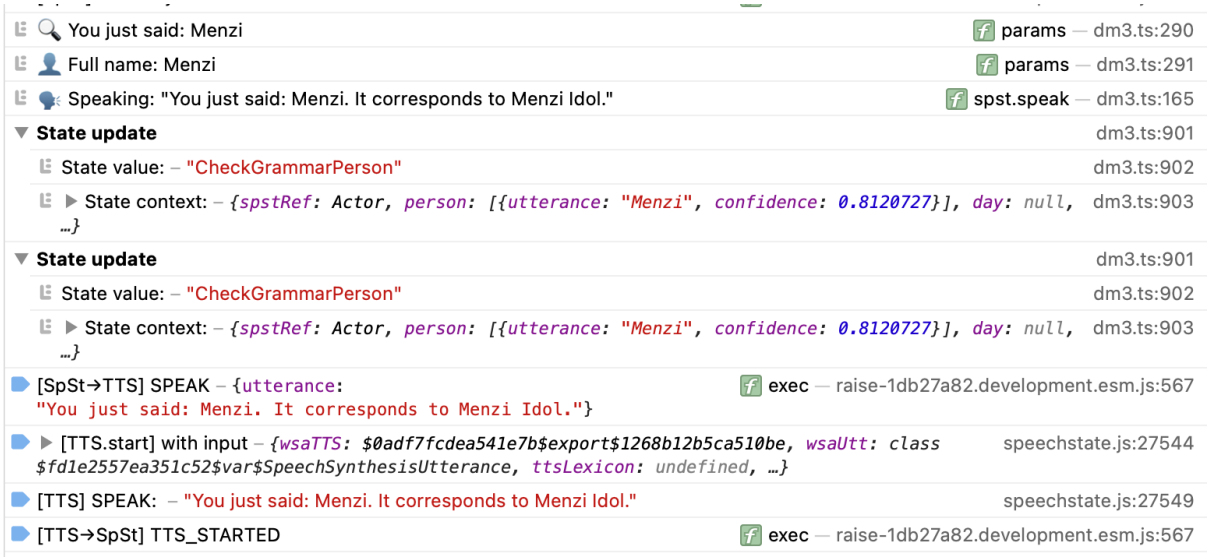

before of custom speech: it misinterpreted the word with Menzie




after of custom speech: It works!

It has been trained on a model based on the follwing dataset (txt file) (here you see just the part for “menzi” word):

Menzi is a great lawyer.
I just met Menzi at the concert.
Do you know Menzi Idol?
Menzi Idol is a good friend.
So, Menzi, do you want to come?
How are you Menzi?
Menzi is reading a book.
What if it happened that Menzi did it?
Kid was playing with Menzi Idol.
Really? Menzi Idol is back in the town?




## 2 ) Error in pronunciation/very marked pronunciation case: “the hierophant”

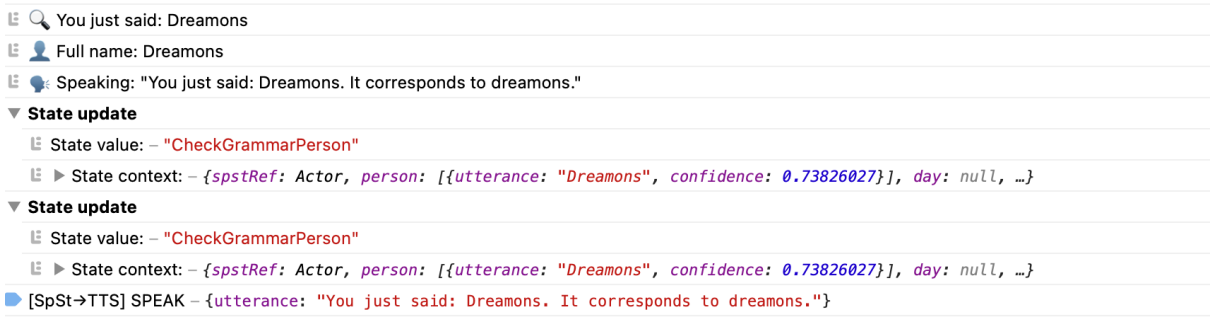
before


after: slightly better. To really improve it I should upload my different audios when I say The hierophant with my particular pronunciation


## 3 ) The new word case: dreamons

**before**
It could not recognise that word, since it does not exist.

after




after

```
🔍 You just said: Dreamons                                   params — dm3.ts:290
👤 Full name: Dreamons                                       params — dm3.ts:291
🗣️ Speaking: "You just said: Dreamons. It corresponds to dreamons."   spst.speak — dm3.ts:165
▼ State update                                               dm3.ts:901
    State value: – "CheckGrammarPerson"                      dm3.ts:902
    ▶ State context: – {spstRef: Actor, person: [{utterance: "Dreamons", confidence: 0.17028476}], day:   dm3.ts:903
    null, …}
▼ State update                                               dm3.ts:901
    State value: – "CheckGrammarPerson"                      dm3.ts:902
    ▶ State context: – {spstRef: Actor, person: [{utterance: "Dreamons", confidence: 0.17028476}], day:   dm3.ts:903
    null, …}
[SpSt→TTS] SPEAK – {utterance:                               exec — raise-1db27a82.development.esm.js:567
"You just said: Dreamons. It corresponds to dreamons."}
▶ [TTS.start] with input – {wsaTTS: $0adf7fcdea541e7b$export$1268b12b5ca510be, wsaUtt: class   speechstate.js:27544
$fd1e2557ea351c52$var$SpeechSynthesisUtterance, ttsLexicon: undefined, …}
[TTS] SPEAK: – "You just said: Dreamons. It corresponds to dreamons."   speechstate.js:27549
[TTS→SpSt] TTS_STARTED                                       exec — raise-1db27a82.development.esm.js:567
▼ State update                                               dm3.ts:901
    State value: – "CheckGrammarPerson"                      dm3.ts:902
    ▶ State context: – {spstRef: Actor, person: [{utterance: "Dreamons", confidence: 0.17028476}], day:   dm3.ts:903
    null, …}
[TTS] TTS_STARTED                                            speechstate.js:27554
[TTS→SpSt] SPEAK_COMPLETE                                    exec — raise-1db27a82.development.esm.js:567
```