1 Part A: Hard cases for Speech Recognition

For my lab 3 project I used characters from The Moomins and added the most prominent characters into my grammar. When testing my machine I had the issue that all my Moomin-characters didn't get recognized by speechstate. Because of limited time (and minor frustration) I stopped experimenting with different pronunciations and added a common name and smaller roles out of the Moominverse (Andreas, Stinky) to test my machine. Therefore I can confidently say that the names of the main characters of The Moomins are hard to recognize. Further ideas for difficult recognition are: Symphonie fantastique, (Camille) Saint-Saëns and Chopin (french or polish pronunciation). Chopin pronounced scho-pin got recognized. All in all my confidence score was around 0.2-0.3 for person, day, time and confirmation in the beginning. Comparing with the confidence score presented in the assignment example, this is a low score. Reasons for this could be that I'm not a native english speaker. After some practice I was able to increase the confidence score until 0,4 when using 'Andreas' as person.
In an attempt to solve the recognition I could add more grammar. For this I would repeat each person that I want my machine to recognize multiple times to collect the different recognized utterances. I could add these utterances to the grammar and link them to the person they 'belong' to.
Example: Correct utterance: Moomintroll; Recognized utterances: Human troll, Moomin toll, Moomin doll.
New grammar:

```
const grammar: Record<string, GrammarEntry> = {
  moomintroll: { person: "Moomintroll" },
  human troll: { person: "Moomintroll" },
  moomin troll: { person: "Moomintroll" },
  moomin doll: { person: "Moomintroll" },
  moominmamma: { person: "Moominmamma" },
  ...
  }
```

Th issue with this is clear: huge amount of grammar that will never be enough to cover all the different kinds of pitches and accents. Therefore a cleaner solution would involve a machine that does not rely on a set and exclusive grammar.