UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

FACULTAD DE INGENIERÍA

ROBOTS MÓVILES

PRÁCTICA 4: Reconocimiento de voz usando pocketsphinx

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Ejemplos de frases que se pueden reconocer (restaurant.gram)

- JUSTINA YES
- JUSTINA NO
- JUSTINA WAIT
- JUSTINA START
- JUSTINA TAKE A ORDER
- JUSTINA THIS IS THE ORDER
- I WANT A TEA
- I WANT A BEER
- I WANT A COKE
- I WANT A WATER
- I WANT PRINGLES AND CHIPS
- I WANT PASTA AND COOKIES
- I WANT TUNA FISH AND NOODLES
- I WANT MUESLI AND M AND M
- I WANT ROBO O'S AND CHOCO FLAKES

Parámetros mencionados en el punto 5 de la diapositiva 19

- gram: Donde se encuentra el archivo .gram donde se encuentra la gramática que utilizará para reconocer las frases.
- dict: Donde se encuentra el archivo .dict que utilizará.
- grammar: El nombre de la gramática a utilizar que se incluye en el archivo .gram

```
1 #JSGF V1.0;
2 grammar restaurant;
3 public <command> = (<justina> |
4 <justina> = JUSTINA (YES | NO |
5 <wantCombo> = I WANT [A] (PRING
  MUESLI | M AND M) AND (PRINGLES
  MUESLI | M AND M);
6 <wantBeverage> = I WANT A (TEA
```

- rule: La regla que utilizará y que igual se encuentra en el .gram

```
1 #JSGF V1.0;
2 grammar restaurant;
3 public <command> = (<justina> |
4 <justina> = JUSTINA (YES | NO |
5 <wantCombo> = I WANT [A] (PRINGI
  MUESLI | M AND M) AND (PRINGLES
  MUESLI | M AND M);
6 <wantBeverage> = I WANT A (TEA |
```

Capturas de pantalla de frases reconocidas

```
INFO: fsg_search.c(869): fsg 0.83 CPU 0.378 xRT
INFO: fsg_search.c(871): fsg 13.55 wall 6.157 xRT
[INFO] [1587586601.910679]: OUTPUT: "I WANT PRINGLES AND CHIPS"
INFO: cmn_live.c(88): Update from < 34.50 11.79  3.38  1.02  3.15  4.70 -3.42 -0.21 -2.51  1.81 -1.78  0.26 -1.42 >
INFO: cmn_live.c(105): Update to   < 34.69 12.20  3.28  0.93  3.31  4.62 -3.70 -0.35 -2.45  1.96 -1.77  0.07 -1.39 >
INFO: cmn_live.c(120): Update from < 34.69 12.20  3.28  0.93  3.31  4.62 -3.70 -0.35 -2.45  1.96 -1.77  0.07 -1.39 >
INFO: cmn_live.c(138): Update to   < 34.92 12.54  2.93 -0.29  2.95  4.40 -3.89 -0.20 -2.05  2.46 -0.94  0.03 -1.57 >
INFO: fsg_search.c(859): 203 frames, 5894 HMMs (29/fr), 16569 senones (81/fr), 1126 history entries (5/fr)

INFO: fsg_search.c(869): fsg 0.65 CPU 0.318 xRT
INFO: fsg_search.c(871): fsg 5.70 wall 2.795 xRT
[INFO] [1587586607.618960]: OUTPUT: "I WANT PASTA AND COOKIES"
INFO: cmn_live.c(88): Update from < 34.92 12.54  2.93 -0.29  2.95  4.40 -3.89 -0.20 -2.05  2.46 -0.94  0.03 -1.57 >
INFO: cmn_live.c(105): Update to   < 35.19 12.97  3.12 -0.71  2.75  3.93 -4.07 -0.56 -2.22  2.31 -1.25 -0.42 -1.52 >
INFO: cmn_live.c(120): Update from < 35.19 12.97  3.12 -0.71  2.75  3.93 -4.07 -0.56 -2.22  2.31 -1.25 -0.42 -1.52 >
INFO: cmn_live.c(138): Update to   < 35.14 13.01  2.88  1.17  4.14  3.66 -4.11 -0.18 -1.87  2.34 -1.71 -1.39 -1.71 >
INFO: fsg_search.c(859): 283 frames, 8633 HMMs (30/fr), 23337 senones (82/fr), 1729 history entries (6/fr)

INFO: fsg_search.c(869): fsg 0.90 CPU 0.315 xRT
INFO: fsg_search.c(871): fsg 9.39 wall 3.306 xRT
[INFO] [1587586617.013931]: OUTPUT: "I WANT MUESLI AND M AND M"
INFO: cmn_live.c(88): Update from < 35.14 13.01  2.88  1.17  4.14  3.66 -4.11 -0.18 -1.87  2.34 -1.71 -1.39 -1.71 >
INFO: cmn_live.c(105): Update to   < 35.65 14.70  4.29  0.26  2.09  3.32 -3.76 -0.18 -2.12  1.70 -1.44 -1.80 -2.10 >
INFO: cmn_live.c(120): Update from < 35.65 14.70  4.29  0.26  2.09  3.32 -3.76 -0.18 -2.12  1.70 -1.44 -1.80 -2.10 >
INFO: cmn_live.c(138): Update to   < 35.32 14.16  4.30  0.32  1.97  3.31 -3.59 -0.05 -2.01  1.71 -1.35 -1.70 -2.15 >
INFO: fsg_search.c(859): 166 frames, 3797 HMMs (22/fr), 11064 senones (66/fr), 879 history entries (5/fr)
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INFO: fsg_search.c(869): fsg 0.49 CPU 0.304 xRT
INFO: fsg_search.c(871): fsg 3.01 wall 1.859 xRT
[INFO] [1587586563.760810]: OUTPUT: "I WANT A BEER"
INFO: cmn_live.c(88): Update from < 34.44 11.89  1.75  1.80  5.62  4.51 -3.17  0.54 -1.28  2.21 -1.54  0.01 -1.07 >
INFO: cmn_live.c(105): Update to   < 34.57 12.51  1.75  0.52  4.87  5.20 -2.87  0.41 -1.51  2.05 -1.18  0.02 -1.50 >
INFO: cmn_live.c(120): Update from < 34.57 12.51  1.75  0.52  4.87  5.20 -2.87  0.41 -1.51  2.05 -1.18  0.02 -1.50 >
INFO: cmn_live.c(138): Update to   < 34.18 11.73  1.49  0.22  4.59  5.12 -2.63  0.79 -1.32  1.85 -1.22  0.28 -1.44 >
INFO: fsg_search.c(859): 170 frames, 5688 HMMs (33/fr), 14513 senones (85/fr), 1373 history entries (8/fr)

INFO: fsg_search.c(869): fsg 0.36 CPU 0.212 xRT
INFO: fsg_search.c(871): fsg 2.40 wall 1.404 xRT
[INFO] [1587586566.164229]: OUTPUT: "I WANT A COKE"
INFO: cmn_live.c(120): Update from < 34.18 11.73  1.49  0.22  4.59  5.12 -2.63  0.79 -1.32  1.85 -1.22  0.28 -1.44 >
INFO: cmn_live.c(138): Update to   < 34.19 11.78  1.88  0.47  4.31  5.36 -2.87  0.56 -1.45  2.44 -1.33  0.01 -1.40 >
INFO: fsg_search.c(859): 156 frames, 9979 HMMs (63/fr), 22602 senones (144/fr), 1955 history entries (12/fr)

INFO: fsg_search.c(869): fsg 0.95 CPU 0.608 xRT
INFO: fsg_search.c(871): fsg 16.35 wall 10.413 xRT
[INFO] [1587586582.516046]: OUTPUT: "I WANT A TEA"
INFO: cmn_live.c(88): Update from < 34.19 11.78  1.88  0.47  4.31  5.36 -2.87  0.56 -1.45  2.44 -1.33  0.01 -1.40 >
INFO: cmn_live.c(105): Update to   < 34.94 13.24  2.35 -0.07  3.30  5.10 -2.91 -0.11 -1.94  2.69 -1.03 -0.05 -1.56 >
INFO: cmn_live.c(120): Update from < 34.94 13.24  2.35 -0.07  3.30  5.10 -2.91 -0.11 -1.94  2.69 -1.03 -0.05 -1.56 >
INFO: cmn_live.c(138): Update to   < 34.48 12.79  2.57  0.00  3.16  5.09 -2.75 -0.00 -2.25  2.09 -1.30  0.29 -1.22 >
INFO: fsg_search.c(859): 159 frames, 4569 HMMs (28/fr), 12021 senones (75/fr), 1067 history entries (6/fr)

INFO: fsg_search.c(869): fsg 0.50 CPU 0.310 xRT
INFO: fsg_search.c(871): fsg 5.84 wall 3.651 xRT
[INFO] [1587586588.363065]: OUTPUT: "I WANT A WATER"
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INFO: fsg_search.c(869): fsg 0.31 CPU 0.241 xRT
INFO: fsg_search.c(871): fsg 1.84 wall 1.448 xRT
[INFO] [1587586514.546491]: OUTPUT: "JUSTINA NO"
INFO: cmn_live.c(120): Update from < 33.82  7.89  1.74  0.78  3.11  4.54 -2.11  0.53 -0.93  3.24 -2.22 -1.46 -0.20 >
INFO: cmn_live.c(138): Update to   < 33.68  8.15  1.56  1.93  3.81  4.03 -2.77  0.47 -0.71  2.74 -2.34 -1.01 -0.19 >
INFO: fsg_search.c(859): 128 frames, 4599 HMMs (35/fr), 11898 senones (92/fr), 919 history entries (7/fr)

INFO: fsg_search.c(869): fsg 0.43 CPU 0.332 xRT
INFO: fsg_search.c(871): fsg 3.56 wall 2.758 xRT
[INFO] [1587586518.127073]: OUTPUT: "JUSTINA WAIT"
INFO: cmn_live.c(88): Update from < 33.68  8.15  1.56  1.93  3.81  4.03 -2.77  0.47 -0.71  2.74 -2.34 -1.01 -0.19 >
INFO: cmn_live.c(105): Update to   < 33.84  8.26  1.63  1.61  4.00  4.16 -2.91  0.70 -0.42  2.65 -2.33 -1.12 -0.39 >
INFO: cmn_live.c(120): Update from < 33.84  8.26  1.63  1.61  4.00  4.16 -2.91  0.70 -0.42  2.65 -2.33 -1.12 -0.39 >
INFO: cmn_live.c(138): Update to   < 33.59  8.09  0.83  1.20  3.90  4.15 -3.02  0.74 -0.46  2.90 -1.86 -1.08 -0.57 >
INFO: fsg_search.c(859): 159 frames, 4881 HMMs (30/fr), 12657 senones (79/fr), 841 history entries (5/fr)

INFO: fsg_search.c(869): fsg 0.61 CPU 0.383 xRT
INFO: fsg_search.c(871): fsg 10.76 wall 6.726 xRT
[INFO] [1587586528.894996]: OUTPUT: "JUSTINA START"
INFO: cmn_live.c(120): Update from < 33.59  8.09  0.83  1.20  3.90  4.15 -3.02  0.74 -0.46  2.90 -1.86 -1.08 -0.57 >
INFO: cmn_live.c(138): Update to   < 33.95  9.35  0.41  0.95  4.37  4.23 -3.20  0.72 -0.66  2.08 -2.15 -0.95 -0.48 >
INFO: fsg_search.c(859): 187 frames, 5437 HMMs (29/fr), 14393 senones (76/fr), 902 history entries (4/fr)

INFO: fsg_search.c(869): fsg 0.49 CPU 0.261 xRT
INFO: fsg_search.c(871): fsg 3.35 wall 1.780 xRT
[INFO] [1587586532.246091]: OUTPUT: "JUSTINA TAKE A ORDER"
INFO: cmn_live.c(88): Update from < 33.95  9.35  0.41  0.95  4.37  4.23 -3.20  0.72 -0.66  2.08 -2.15 -0.95 -0.48 >
INFO: cmn_live.c(105): Update to   < 34.06  9.33  0.32  0.91  4.44  4.37 -3.08  0.80 -0.62  1.97 -2.32 -1.02 -0.52 >
INFO: cmn_live.c(120): Update from < 34.06  9.33  0.32  0.91  4.44  4.37 -3.08  0.80 -0.62  1.97 -2.32 -1.02 -0.52 >
INFO: cmn_live.c(138): Update to   < 34.20  9.52  0.50  1.52  5.71  4.04 -3.36  0.90 -0.94  2.04 -2.65 -0.77 -0.32 >
INFO: fsg_search.c(859): 188 frames, 2423 HMMs (12/fr), 8144 senones (43/fr), 562 history entries (2/fr)

INFO: fsg_search.c(869): fsg 0.67 CPU 0.352 xRT
INFO: fsg_search.c(871): fsg 10.90 wall 5.766 xRT
[INFO] [1587586543.149022]: OUTPUT: "JUSTINA THIS IS THE ORDER"
```