Montreal Forced Aligner Installer:
MFA can be installed with Anaconda or Miniconda

Available Acoustic models: https://mfa-models.readthedocs.io/en/latest/acoustic/index.html

Available Pronunciation dictionaries:
https://mfa-models.readthedocs.io/en/latest/dictionary/index.html

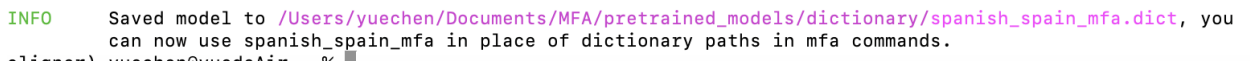
Download the English dictionary
mfa model download acoustic english_us_arpa

Download the Mandarin dictionary
mfa model download dictionary mandarin_mfa

Download the Spanish dictionary
mfa model download dictionary spanish_spain_mfa

Download the Russian dictionary
mfa model download dictionary russian_mfa

Sample output:



Available MFA dictionary:
Available: abkhaz_cv, armenian_cv, bashkir_cv, basque_cv, belarusian_cv, bulgarian_cv, bulgarian_mfa, chuvash_cv, croatian_mfa, czech_cv, czech_mfa, dutch_cv, english_india_mfa, english_mfa, english_nigeria_mfa, english_nonnative_mfa, english_uk_mfa, english_us_arpa, english_us_mfa, french_mfa, french_prosodylab, georgian_cv, german_mfa, german_prosodylab, greek_cv, guarani_cv, hausa_mfa, hindi_cv, hungarian_cv, indonesian_cv, italian_cv, japanese_mfa, kazakh_cv, korean_jamo_mfa, korean_mfa, kurmanji_cv, kyrgyz_cv, maltese_cv, mandarin_china_mfa, mandarin_erhua_mfa, mandarin_mfa, mandarin_pinyin, mandarin_taiwan_mfa, polish_cv, polish_mfa, portuguese_brazil_mfa, portuguese_cv, portuguese_mfa, portuguese_portugal_mfa, punjabi_cv, romanian_cv, russian_cv, russian_mfa, sorbian_upper_cv, spanish_latin_america_mfa, spanish_mfa, spanish_spain_mfa, swahili_mfa, swedish_cv, swedish_mfa, tamil_cv, tatar_cv, thai_cv, thai_mfa, turkish_cv, turkish_mfa, ukrainian_cv, ukrainian_mfa, urdu_cv, uyghur_cv, uzbek_cv, vietnamese_cv, vietnamese_hanoi_mfa, vietnamese_ho_chi_minh_city_mfa, vietnamese_hue_mfa, and vietnamese_mfa.

Download the English pre-trained model
mfa model download language_model english_mfa_lm

Download the Mandarin pre-trained model
mfa model download language_model mandarin_mfa_lm

Download the Spanish pre-trained model
mfa model download language_model spanish_mfa_lm

Download the Russian pre-trained model
mfa model download language_model russian_mfa_lm

Sample output:

```
(aligner) yuechen@yuedeAir ~ % mfa model download language_model spanish_mfa_lm
 INFO     Saved model to /Users/yuechen/Documents/MFA/pretrained_models/language_model/spanish_mfa_lm.zip, you
          can now use spanish_mfa_lm in place of language_model paths in mfa commands.
(aligner) yuechen@yuedeAir ~ % mfa model download dictionary spanish_spain_mfa
```

Available MFA pre-trained [model]:

ID	Language	Dialect	Phoneset	License
Abkhaz CV acoustic model v2_0_0	Abkhaz	N/A	XPF	CC-0
Armenian CV acoustic model v2_0_0	Armenian	N/A	XPF	CC-0
Bashkir CV acoustic model v2_0_0	Bashkir	N/A	XPF	CC-0
Basque CV acoustic model v2_0_0	Basque	N/A	XPF	CC-0
Belarusian CV acoustic model v2_0_0	Belarusian	N/A	XPF	CC-0
Bulgarian CV acoustic model v2_0_0	Bulgarian	N/A	XPF	CC-0
Bulgarian MFA acoustic model v2_0_0	Bulgarian	N/A	MFA	CC BY 4.0
Bulgarian MFA acoustic model v2_0_0a	Bulgarian	N/A	MFA	CC BY 4.0
Bulgarian MFA acoustic model v3_0_0	Bulgarian	N/A	MFA	CC BY 4.0
Chuvash CV acoustic model v2_0_0	Chuvash	N/A	XPF	CC-0
Croatian MFA acoustic model v2_0_0	Croatian	N/A	MFA	CC BY 4.0
Croatian MFA acoustic model v2_0_0a	Croatian	N/A	MFA	CC BY 4.0
Czech CV acoustic model v2_0_0	Czech	N/A	XPF	CC-0
Czech MFA acoustic model v2_0_0	Czech	N/A	MFA	CC BY 4.0
Czech MFA acoustic model v2_0_0a	Czech	N/A	MFA	CC BY 4.0
Dutch CV acoustic model v2_0_0	Dutch	N/A	Epitran	CC-0
English (US) ARPA acoustic model v2_0_0	English	US	ARPA	CC BY 4.0
English (US) ARPA acoustic model v2_0_0a	English	US	ARPA	CC BY 4.0
English (US) ARPA acoustic model v3_0_0	English	US	ARPA	CC BY 4.0
English MFA acoustic model v2_0_0	English	Nigeria;UK;US	MFA	CC BY 4.0
English MFA acoustic model v2_0_0a	English	Nigeria;UK;US	MFA	CC BY 4.0
English MFA acoustic model v2_2_1	English	India;Nigeria;UK;US	MFA	CC BY 4.0
English MFA acoustic model v3_0_0	English	India;Nigeria;UK;US	MFA	CC BY 4.0
English MFA acoustic model v3_1_0	English	India;Nigeria;UK;US	MFA	CC BY 4.0
French MFA acoustic model v2_0_0	French	N/A	MFA	CC BY 4.0
French MFA acoustic model v2_0_0a	French	N/A	MFA	CC BY 4.0
French MFA acoustic model v3_0_0	French	N/A	MFA	CC BY 4.0
Georgian CV acoustic model v2_0_0	Georgian	N/A	XPF	CC-0
German MFA acoustic model v2_0_0	German	N/A	MFA	CC BY 4.0
German MFA acoustic model v2_0_0a	German	N/A	MFA	CC BY 4.0
German MFA acoustic model v3_0_0	German	N/A	MFA	CC BY 4.0

Greek CV acoustic model v2_0_0	Greek	N/A	XPF	CC-0	
Guarani CV acoustic model v2_0_0	Guarani	N/A	XPF	CC-0	
Hausa CV acoustic model v2_0_0	Hausa	N/A	Epitran	CC-0	
Hausa MFA acoustic model v2_0_0	Hausa	N/A	MFA	CC BY 4.0	
Hausa MFA acoustic model v2_0_0a	Hausa	N/A	MFA	CC BY 4.0	
Hausa MFA acoustic model v3_0_0	Hausa	N/A	MFA	CC BY 4.0	
Hungarian CV acoustic model v2_0_0	Hungarian	N/A	XPF	CC-0	
Italian CV acoustic model v2_0_0	Italian	N/A	Epitran	CC-0	
Japanese MFA acoustic model v2_0_1a	Japanese	N/A	MFA	CC BY 4.0	
Japanese MFA acoustic model v3_0_0	Japanese	N/A	MFA	CC BY 4.0	
Kazakh CV acoustic model v2_0_0	Kazakh	N/A	Epitran	CC-0	
Korean MFA acoustic model v2_0_0	Korean	N/A	MFA	CC BY 4.0	
Korean MFA acoustic model v2_0_0a	Korean	N/A	MFA	CC BY 4.0	
Korean MFA acoustic model v3_0_0	Korean	N/A	MFA	CC BY 4.0	
Kurmanji CV acoustic model v2_0_0	Kurmanji	N/A	Epitran	CC-0	
Kyrgyz CV acoustic model v2_0_0	Kyrgyz	N/A	Epitran	CC-0	
Mandarin MFA acoustic model v2_0_0	Mandarin	China;Erhua;Taiwan	MFA	CC BY 4.0	
Mandarin MFA acoustic model v2_0_0a	Mandarin	China;Erhua;Taiwan	MFA	CC BY 4.0	
Mandarin MFA acoustic model v3_0_0	Mandarin	China;Erhua;Taiwan	MFA	CC BY 4.0	
Polish CV acoustic model v2_0_0	Polish	N/A	Epitran	CC-0	
Polish MFA acoustic model v2_0_0	Polish	N/A	MFA	CC BY 4.0	
Polish MFA acoustic model v2_0_0a	Polish	N/A	MFA	CC BY 4.0	
Portuguese CV acoustic model v2_0_0	Portuguese	Brazil;Portugal	Epitran	CC-0	
Portuguese MFA acoustic model v2_0_0	Portuguese	Brazil;Portugal	MFA	CC BY 4.0	
Portuguese MFA acoustic model v2_0_0a	Portuguese	Brazil;Portugal	MFA	CC BY 4.0	
Romanian CV acoustic model v2_0_0	Romanian	N/A	XPF	CC-0	
Russian CV acoustic model v2_0_0	Russian	N/A	Epitran	CC-0	
Russian MFA acoustic model v2_0_0	Russian	N/A	MFA	CC BY 4.0	
Russian MFA acoustic model v2_0_0a	Russian	N/A	MFA	CC BY 4.0	
Russian MFA acoustic model v3_1_0	Russian	N/A	MFA	CC BY 4.0	
Sorbian (Upper) CV acoustic model v2_0_0	Sorbian	Upper	XPF	CC-0	
Spanish MFA acoustic model v2_0_0	Spanish	Latin America;Spain	MFA	CC BY 4.0	
Spanish MFA acoustic model v2_0_0a	Spanish	Latin America;Spain	MFA	CC BY 4.0	
Swahili MFA acoustic model v2_0_0	Swahili	N/A	MFA	CC BY 4.0	
Swahili MFA acoustic model v2_0_0a	Swahili	N/A	MFA	CC BY 4.0	
Swedish CV acoustic model v2_0_0	Swedish	N/A	XPF	CC-0	
Swedish MFA acoustic model v2_0_0	Swedish	N/A	MFA	CC BY 4.0	
Swedish MFA acoustic model v2_0_0a	Swedish	N/A	MFA	CC BY 4.0	
Swedish MFA acoustic model v3_0_0	Swedish	N/A	MFA	CC BY 4.0	

Tamil CV acoustic model v2_0_0	Tamil	N/A	XPF	CC-0
Tatar CV acoustic model v2_0_0	Tatar	N/A	Epitran	CC-0
Thai CV acoustic model v2_0_0	Thai	N/A	XPF	CC-0
Thai MFA acoustic model v2_0_0	Thai	N/A	MFA	CC BY 4.0
Thai MFA acoustic model v2_0_0a	Thai	N/A	MFA	CC BY 4.0
Thai MFA acoustic model v3_0_0	Thai	N/A	MFA	CC BY 4.0
Turkish CV acoustic model v2_0_0	Turkish	N/A	XPF	CC-0
Turkish MFA acoustic model v2_0_0	Turkish	N/A	MFA	CC BY 4.0
Turkish MFA acoustic model v2_0_0a	Turkish	N/A	MFA	CC BY 4.0
Turkish MFA acoustic model v3_0_0	Turkish	N/A	MFA	CC BY 4.0
Ukrainian CV acoustic model v2_0_0	Ukrainian	N/A	XPF	CC-0
Ukrainian MFA acoustic model v2_0_0	Ukrainian	N/A	MFA	CC BY 4.0
Ukrainian MFA acoustic model v2_0_0a	Ukrainian	N/A	MFA	CC BY 4.0
Ukrainian MFA acoustic model v3_0_0	Ukrainian	N/A	MFA	CC BY 4.0
Uyghur CV acoustic model v2_0_0	Uyghur	N/A	Epitran	CC-0
Uzbek CV acoustic model v2_0_0	Uzbek	N/A	Epitran	CC-0
Vietnamese CV acoustic model v2_0_0	Vietnamese	N/A	XPF	CC-0
Vietnamese MFA acoustic model v2_0_0	Vietnamese	Hanoi;Ho Chi Minh City	MFA	CC BY 4.0
Vietnamese MFA acoustic model v2_0_0a	Vietnamese	Hanoi;Ho Chi Minh City	MFA	CC BY 4.0
Vietnamese MFA acoustic model v3_0_0	Vietnamese	Hanoi;Ho Chi Minh City	MFA	CC BY 4.0

Miniconda installer:

Windows: Miniconda3 Windows 64-bit

```
curl https://repo.anaconda.com/miniconda/Miniconda3-latest-Windows-x86_64.exe -o miniconda.exe
start /wait "" .\miniconda.exe /S
del miniconda.exe
```

Mac: Miniconda3 macOS Intel x86 64-bit bash

```
mkdir -p ~/miniconda3
curl https://repo.anaconda.com/miniconda/Miniconda3-latest-MacOSX-arm64.sh -o ~/miniconda3/miniconda.sh
bash ~/miniconda3/miniconda.sh -b -u -p ~/miniconda3
rm ~/miniconda3/miniconda.sh
```

After installing, close and reopen your terminal application or refresh it by running the following command:

source ~/miniconda3/bin/activate

Set up the environment
Local environment from Miniconda in terminal:

1. **To create an environment:**

conda create -n mfa python=3.9

```
Last login: Fri Nov 15 13:14:24 on ttys000
conda create -n mfa python=3.8
(base) yuechen@yuedeAir ~ % conda create -n mfa python=3.8
Channels:
 - conda-forge
 - defaults
Platform: osx-arm64
Collecting package metadata (repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: /Users/yuechen/miniconda3/envs/mfa

  added / updated specs:
    - python=3.8


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    python-3.8.20              |h7d35d02_2_cpython        11.2 MB  conda-forge
    ------------------------------------------------------------
```

2. **When conda asks you to proceed, type y:**
3. **Activate the New Environment**
   conda activate mfa
   Note. the name for your environment will be named as (mfa)

```
Proceed ([y]/n)? conda activate mfa
Invalid choice: conda activate mfa
Proceed ([y]/n)?
```

```
Downloading and Extracting Packages:

Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate mfa
#
# To deactivate an active environment, use
#
#     $ conda deactivate
```

4. **Install Montreal Forced Aligner**
   pip install montreal-forced-aligner
5. **Check the Environment's Path**
   echo $PATH
   Sample output:

/path/to/mfa:/Users/yuechen/miniconda3/envs/mfa/bin:/Users/yuechen/miniconda3/condabin:/Library/Frameworks/Python.framework/Versions/3.12/bin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/appleinternal/bin:/Library/Apple/usr/bin:/Applications/quarto/bin

6. **Activate (mfa)**

```
(base) yuechen@yuedeAir ~ % conda activate mfa
(mfa) yuechen@yuedeAir ~ %
```

7. **Download Pre-trained Models and Dictionaries**

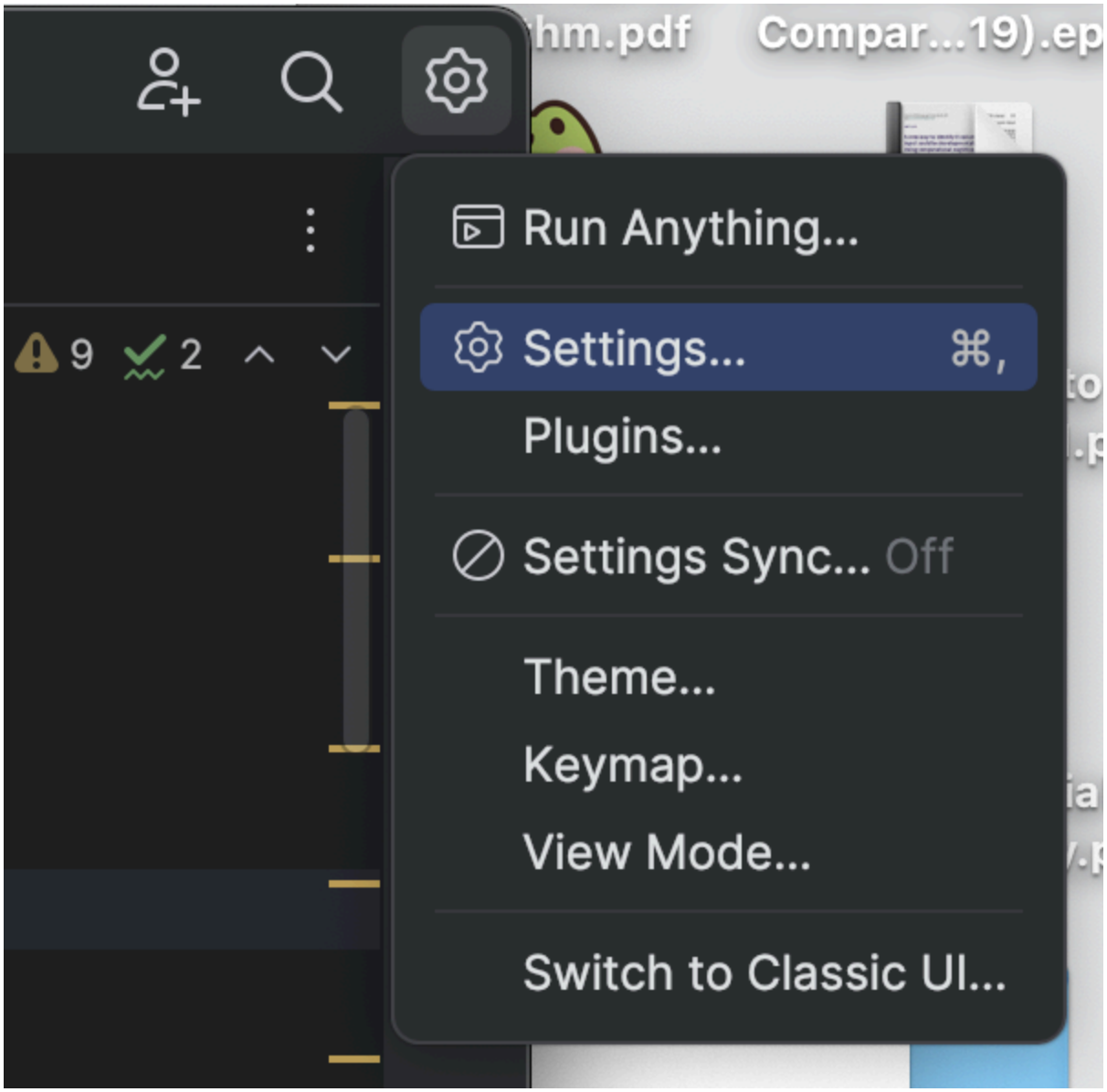
Dictionary: mfa model download acoustic english_us_arpa

Model: mfa model download language_model english_mfa_lm

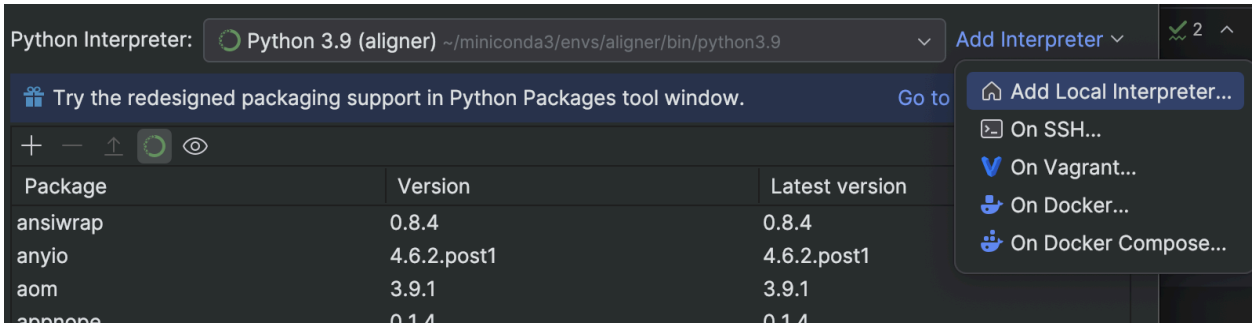
8. **Alignment**

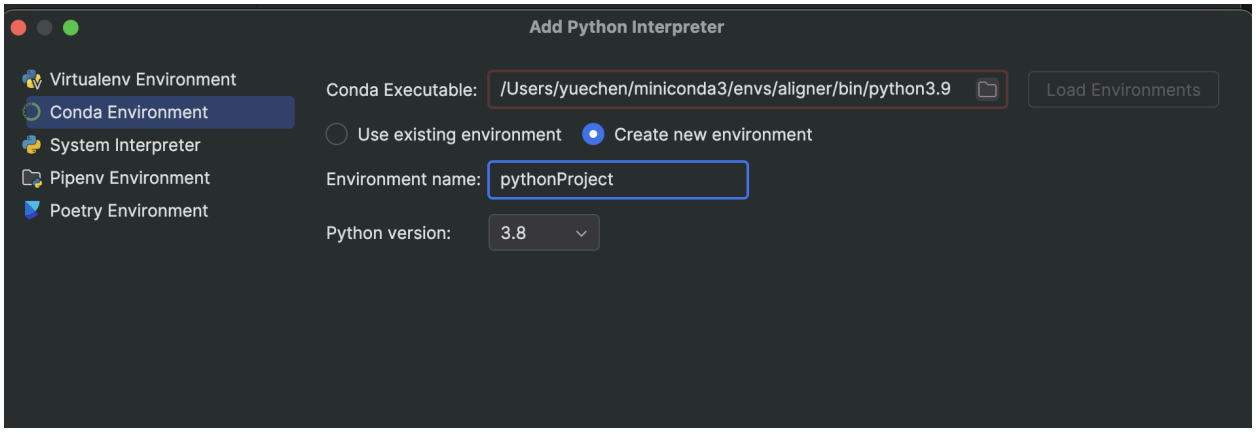
mfa align /path/to/your/corpus_directory /path/to/your/dictionary.dict /path/to/your/acoustic_model.zip /path/to/output_directory

From Pycharm:



Add interpreter → add local interpreter: find miniconda3/envs/aligner/bin/python3.9





Run MFA From terminal

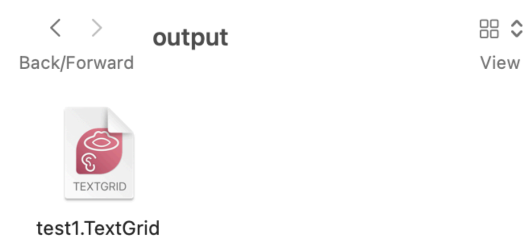
1. **Activate aligner environment:**
   conda activate aligner
2. **Check if MFA is installed:**
   mfa --version
3. **Install MFA (if necessary):**
   conda install -c conda-forge montreal-forced-aligner
4. **Run MFA to align files:**
   mfa align /path/to/**audio_and_text** /path/to/**dictionary** /path/to/**acoustic_model** /path/to/**output**

Example

mfa align /Users/yuechen/Desktop/MFA_project/combined_files /Users/yuechen/Documents/MFA/pretrained_models/dictionary/english_us_arpa.dict /Users/yuechen/Documents/MFA/pretrained_models/acoustic/english_us_arpa.zip /Users/yuechen/Desktop/MFA_project/output

Sample Output:

```
(aligner) yuechen@yuedeAir ~ % mfa align /Users/yuechen/Desktop/MFA_project/combined_files /Users/yuechen/Documents/MFA/pretrained_mo
dels/dictionary/english_us_arpa.dict /Users/yuechen/Documents/MFA/pretrained_models/acoustic/english_us_arpa.zip /Users/yuechen/Deskt
op/MFA_project/output
 INFO     Setting up corpus information...
 INFO     Found 1 speaker across 1 file, average number of utterances per speaker: 1.0
 INFO     Initializing multiprocessing jobs...
 WARNING  Number of jobs was specified as 3, but due to only having 1 speakers, MFA will only use 1 jobs. Use the
          --single_speaker flag if you would like to split utterances across jobs regardless of their speaker.
 INFO     Text already normalized.
 INFO     Creating corpus split with features...
100% ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 1/1  [ 0:00:04 < 0:00:00 , ? it/s ]
 INFO     Features already generated.
 INFO     Compiling training graphs...
100% ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 1/1  [ 0:00:02 < 0:00:00 , ? it/s ]
 INFO     Performing first-pass alignment...
 INFO     Generating alignments...
100% ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 1/1  [ 0:00:04 < 0:00:00 , ? it/s ]
 INFO     Calculating fMLLR for speaker adaptation...
100% ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 1/1  [ 0:00:02 < 0:00:00 , ? it/s ]
 INFO     Performing second-pass alignment...
 INFO     Generating alignments...
100% ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 1/1  [ 0:00:03 < 0:00:00 , ? it/s ]
 INFO     Collecting phone and word alignments from alignment lattices...
100% ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 1/1  [ 0:00:03 < 0:00:00 , ? it/s ]
 WARNING  Alignment analysis not available without using postgresql
 INFO     Exporting alignment TextGrids to /Users/yuechen/Desktop/MFA_project/output...
100% ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 1/1  [ 0:00:02 < 0:00:00 , ? it/s ]
 INFO     Finished exporting TextGrids to /Users/yuechen/Desktop/MFA_project/output!
 INFO     Done! Everything took 36.918 seconds
```



Final Product