Versions freeze

|  |  |  |  |
| --- | --- | --- | --- |
| **Component** | **Version** | **Type** | **Source** |
| **Anaconda** | 2018.12 | External tool | <https://www.anaconda.com/distribution/>  (for Python 3.7) |
| **SPPAS** | 2.0 | LPL tool | <https://www.ortolang.fr/market/tools>  <http://www.sppas.org/downloads/SPPAS-2.0-2019-01-08.zip> |
| **MarsaTag** | 0.8.4  2015-04-23 18:12:17 | LPL tool | TBD |
| **julius** | 4.3.1 | External tool | <https://fr.osdn.net/projects/julius/downloads/60273/julius-4.3.1-win32bin.zip> |
| **wxPython** | 3.0 | External library | <https://sourceforge.net/projects/wxpython/files/wxPython/3.0.2.0/wxPython3.0-win32-3.0.2.0-py27.exe> |
| **jupyter** | below | External tool |  |
| **pyAudioAnalysis** |  | External library | <https://github.com/tyiannak/pyAudioAnalysis> |
| **SPPAS Greg Scripts** |  | Internal library | ??? |
| **Corpus** | 1.0 | Internal resource | <http://139.124.68.168:5000/>  (camille / acorformed)  …/ACORFORMED/Data |
| **Corpus (passation)** | 1.0 | Internal resource | <https://lsis-cloud-01.lsis.org/index.php/s/yo50wMOoLnhdmAz?path=%2F> |
| **xlrd** |  | External library | For loading/manipulating excel files |
| **sox** | 14.4.2 |  | <http://sox.sourceforge.net/> |

Python libraries :

Installed

* Numpy
* Scipy
* Matplotlib
* Scikit-learn
* Xlrd
* openpyxl

Preparing environment

* Install SPPAS
* Prerequisites :
* Install anaconda
* Install wxPython v3.x (not 4.x !)
* Install julius
* Install anaconda
* Configure anaconda for sppas
* Conda create -n sppas python=2.7.14
* Install python libraries

|  |  |
| --- | --- |
| **Name** | **Install command** |
| **numpy** | conda install numpy |
| **scipy** | conda install scipy |
| **scikit-learn** | conda install scikit-learn |
| **matplotlib** | conda install matplotlib |
| **jupyter notebook** | conda install jupyter |
| **pandas** | conda install pandas |
| **pydub** | pip install pydub |
| **xlrd** | conda install xlrd |
| **openpyxl** | conda install openpyxl |
| **Sox (python wrapper)** | pip install sox |
| **wxPython** | conda install wxPython=3 |
| **unicodecsv** | conda install unicodecsv |

Note: installing wxPython with conda can break the environment on python 2...

* Install julius
* Donwload and unzip julius-4.3.1-win32bin.zip in folder $JULIUS\_HOME
* Add $JULIUS\_HOME/bin to PATH environment variable
* Copy julius-4.3.1.exe as julius.exe in $JULIUS\_HOME/bin
* Alternatively, copy julius.exe to C:\WINDOWS

Check : open cmd and :

C:\Users\jerem>julius

Julius rev.4.3.1 - based on

JuliusLib rev.4.3.1 (fast) built for i686-pc-cygwin

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Copyright (c) 1997-2000 Information-technology Promotion Agency, Japan

Copyright (c) 2000-2005 Shikano Lab., Nara Institute of Science and Technology

Copyright (c) 2005-2013 Julius project team, Nagoya Institute of Technology

Try '-setting' for built-in engine configuration.

Try '-help' for run time options.

* Install SPPAS
* Install MarsaTag

In version used there was a mistake in the windows launcher script of Marsatag, so the part in red below had to be manually added to the last line of the batch file :

|  |  |
| --- | --- |
| MarsaTag-UI.sh | MarsaTag-UI.bat |
| …  $JAVA "${JAVA\_OPTS[@]}" -jar "$JAR" -g "$@" | …  %JAVA% %JAVA\_OPTS% "%ORTO\_OPT%" -jar "%JAR%" -g %\* |

Without this, during POS tagging or other activities involving MarsaTag, the Marsatag UI will show up and expected treatments will not be performed.

* Install pyAudioA Analysis
* Install dependencies:

pip install numpy matplotlib scipy sklearn hmmlearn simplejson eyed3 pydub

Note: hmmlearn requires Microsoft Visual C++ compiler for python27 : <https://www.microsoft.com/en-us/download/details.aspx?id=44266>

pip command must be executed from 'base' environment in conda !

needs also vc build tools

<https://visualstudio.microsoft.com/downloads/>



If you get error " LINK : fatal error LNK1158: cannot run 'rc.exe'", then copy rc.exe and rcdll.dll from C:\Program Files (x86)\Windows Kits\8.1\bin\x86 to C:\Program Files (x86)\Microsoft Visual Studio 14.0\VC\bin

* Clone the source of this library:

git clone <https://github.com/tyiannak/pyAudioAnalysis.git>

* Install using pip:

pip install -e .

/Data/<ID>/[Casque|Cave|PC]/

* Superviseur
* Unity
* Video

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| /Data/<ID>/ | [Casque|Cave|PC] |  |  |  |  |
|  |  | Superviseur |  | 00----micro.wav | Enregistrement sonore (médecin + agent(très faible) ) |
|  |  |  |  | Chat-history--.[xml|html] | IPUs (?) + transcription (médecin + agent) |
|  |  |  | Chat-server | Chat\_histo.[json|xml] | IPUs ( ?) + transcription (médecin) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  | Unity |  | 0..n.wav | Sons (voix de l’agent découpé par IPU) |
|  |  |  |  | ---record---.txt | Capteurs de position (séquence temporelle) |
|  |  | Video |  | \*.mp4 | Session complète (pas la même échelle temporelle ?) |

Ideas

* Class imbalance
* Now uses oversampling of minority classes
* Drawback : overfitting
* SMOTE (Synthetic Minority Over-Sampling Technique) ?
* RUSBoost, SMOTEBagging and Underbagging,
* Entropy for movements
* Currently entropy of (head, elbows, wrists…), then averaged to have entropy (head, hands), but :
* Entropy : not necessarily the most meaningful  treat gestures as language is treated ? (ie, have a vocabulary of gestures like head nod, etc, then tag movements with the vocabulary to extract the features)
* Is avering entropies really meaningful ? (for instance, average of entropies of the 3 phases, does not equal entropy of the same session without phase)