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## SPPAS technical sheet

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## TIPA. Travaux interdisciplinaires sur la parole et le langage

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au Laboratoire Parole et Langage

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### Fiche technique SPPAS

<http://www.sppas.org/>

**Brigitte Bigi**

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<http://www.sppas.org/>

## OVERVIEW

SPPAS - *the automatic annotation and analyses of speech*, is a free scientific computer software package. SPPAS is daily developed with the aim to provide a robust and reliable software. It enables easy and efficient access to a wide scope of solutions: annotate, analyze and convert files becomes available to everyone.

## AUTHOR

Brigitte Bigi

## LANGUAGE

python

## FORMATS

audio, video,  
 annotations: *xra*, *TextGrid*,  
*eaf*, *srt*, *mrk*, *trs*, *lab*, ...

## LICENSES

software



resources



documents



## AWARD



## MAIN FEATURES:

### 1. Annotate automatically or semi-automatically

In the present context, annotations are defined as the practice of adding interpretative, linguistic information to an electronic corpus of spoken and/or written language data. SPPAS automatizes the annotation processes and allows users to save time. List of the annotations:

- ✓ Modelling of fundamental frequency (D. Hirst)
- ✓ INTERNATIONAL Transcription System for INTonation (D. Hirst)
- ✓ Search for Inter-Pausal Units – IPU, in an audio file
- ✓ Fill in IPU of an audio file with IPU of a text file
- ✓ Text Normalization converts an orthographic transcription into a tokenized form
- ✓ Phonetization is a grapheme to phonemes conversion based on a dictionary
- ✓ Time-alignment of phonemes and tokens
- ✓ Syllabification of time-aligned phonemes
- ✓ The Time Group Analyzer (D. Gibbon)
- ✓ Search for self-repetitions in time-aligned tokens
- ✓ Set the main activity from time-aligned tokens
- ✓ Estimate the Root-Mean Square values of an audio files in intervals
- ✓ Estimate occurrences and ranks of annotation labels
- ✓ Define the stop-words of time-aligned tokens
- ✓ Face detection, person face identity and face landmark of a video
- ✓ Cued Speech keys generation from the time-aligned phonemes
- ✓ Search for other-repetitions in time-aligned tokens of 2 speakers
- ✓ Search for re-occurrences in synchronized annotations of 2 speakers (M. Karpinski et al.)
- ✓ Detect activity overlaps of 2 speakers
- ✓ Detect repeated sequences in two distinct time-aligned tokens of a same speaker

### 2. Analyze and edit annotations

Some special features are offered in SPPAS for managing annotated files and analyzing data. Among others, it includes a tool to filter multi-levels annotations, another one to estimate descriptive statistics, etc.

### 3. Convert annotated files

Annotations can be imported from and exported to a variety of other formats including Praat (TextGrid, PitchTier, IntensityTier), Elan (eaf), Transcriber (trs), Annotation Pro (antx), Phonedit (mrk), Sclite (ctm, stm), HTK (lab, mlf), subtitles formats (srt, sub), CSV files...

## PLUGINS:

SPPAS allows to add easily plugins. Current ones are:

- AudioSegmenter: segment audio files into several tracks.
- Clean IPU of a transcription
- SAMPA to IPA: convert SAMPA into IPA phonemes encoding
- Classify phones: create tiers with the phonemes articulatory information
- Marsatag: apply MarsaTag French POS-tagger on time-aligned files
- sox: call the Swiss Army Knife of sound processing utilities from SPPAS

## DOCUMENTATION:



## LINGUISTIC RESOURCES:

All the automatic annotations proposed by SPPAS are designed with language-independent algorithms, but some annotations are requiring language-knowledges. This linguistic knowledge is represented in external files so they can be added, edited or removed easily. It also means that adding a new language for a given annotation only consists in adding the linguistic resources the annotation needs, like lexicons, dictionaries, models, set of rules, etc. Existing resources are free, get them here:



### “ Bibliographical citation

Brigitte Bigi (2021). *Resources for SPPAS* [Outil]. ORTOLANG (Open Resources and TOols for LANGuage) - [www.ortolang.fr](http://www.ortolang.fr), <https://hdl.handle.net/11403/sppasresources>.

## SELECTED REFERENCES:

- Brigitte Bigi, Abiola S. Oyelere, Bernard Caron (2021). Resources for Automated Speech Segmentation of the African Language Naija (Nigerian Pidgin). Lecture Notes in Computer Science series. LNAI-12598.
- Mélanie Lancien, Marie-Hélène Côté, Brigitte Bigi (2020). Developing Resources for Automated Speech Processing of Quebec French. The 12th Language Resources and Evaluation Conference, pp. 5323–5328, Marseille (France).
- Brigitte Bigi (2019). Filtering multi-levels annotated data. In 9th Language & Technology Conference: Human Language Technologies as a Challenge for Computer Science and Linguistics, pp. 13-14, Poznań (Poland).
- Brigitte Bigi, Béatrice Priego-Valverde (2019). Search for Inter-Pausal Units: application to Cheese! Corpus. In 9th Language & Technology Conference: Human Language Technologies as a Challenge for Computer Science and Linguistics, pp. 289-293, Poznań (Poland).
- Brigitte Bigi and Christine Meunier (2018). Automatic speech segmentation of spontaneous speech. In Revista de Estudos da Linguagem. International Thematic Issue: Speech Segmentation. Editors: Tommaso Raso, Heliana Mello, Plinio Barbosa, vol. 26, no 4, e-ISSN 2237-2083.
- Brigitte Bigi (2016). A phonetization approach for the forced-alignment task in SPPAS. Human Language Technology. Challenges for Computer Science and Linguistics, LNAI-9561, pp. 397-410.
- **Brigitte Bigi (2015). SPPAS - Multi-lingual Approaches to the Automatic Annotation of Speech. In "the Phonetician" - International Society of Phonetic Sciences, ISSN 0741-6164, Number 111-112 / 2015-I-II, pages 54-69.**
- Brigitte Bigi, Katarzyna Klessa (2015). Automatic Syllabification of Polish. In 7th Language and Technology Conference: Human Language Technologies as a Challenge for Computer Science and Linguistics, pp. 262-266, Poznań (Poland).
- Roxana Fung, Brigitte Bigi (2015). Automatic word segmentation for spoken Cantonese. In Oriental COCOSDA and Conference on Asian Spoken Language Research and Evaluation (O-COCOSDA/CASLRE), pp. 196-201.
- Brigitte Bigi (2014). A Multilingual Text Normalization Approach. Human Language Technology Challenges for Computer Science and Linguistics, LNAI-8387, pp. 515-526.
- Brigitte Bigi, Roxane Bertrand, Mathilde Guardiola (2014). Automatic Detection of Other-Repetition Occurrences: Application to French Conversational Speech. The 9th International Conference on Language Resources and Evaluation, pp. 836-842, Reykjavik (Iceland).
- Brigitte Bigi, Tatsuya Watanabe, Laurent Prévot (2014). Representing Multimodal Linguistic Annotated Data. In The 9th International Conference on Language Resources and Evaluation, pp. 3386-3392, Reykjavik (Iceland).
- Brigitte Bigi (2012). SPPAS: a tool for the phonetic segmentations of Speech, The 8th International Conference on Language Resources and Evaluation, Istanbul (Turkey), pages 1748-1755, ISBN 978-2-9517408-7-7.