

Documentation for

# JULIE Lab UIMA Wrapper for OpenNLP Sentence Splitter

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## 1 Objective

The OPENNLP SENTENCE SPLITTER<sup>1</sup> identifies sentences in a text with respect to user-defined end-of-sentence (*eos*) punctuation markers.<sup>2</sup> JULIE LAB UIMA WRAPPER FOR OPENNLP SENTENCE SPLITTER is part of the Julie Lab NLP tool suite<sup>3</sup> which contains several NLP components (all UIMA compliant) from sentence splitting to named entity recognition and normalization as well as a comprehensive UIMA type system.

UIMA WRAPPER FOR OPENNLP SENTENCE SPLITTER is currently available in version 1.1. For more detailed information on the functioning of the OPENNLP SENTENCE SPLITTER check <http://www.opennlp.org>.

## 2 Requirements and Dependencies

JULIE LAB UIMA WRAPPER FOR OPENNLP SENTENCE SPLITTER is written in Java 1.5 using Apache UIMA version 2.2.0-incubation<sup>4</sup>. It was not tested with other UIMA versions.

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<sup>1</sup><http://www.opennlp.org>

<sup>2</sup>With regard to the biological domain we extended the default set `{.!}` with `{:}`. In its default mode, the OPENNLP SENTENCE SPLITTER only considers words containing these *eos*.

<sup>3</sup><http://www.julielab.de/>

<sup>4</sup><http://incubator.apache.org/uima/>

The input and output of an AE takes place by annotation objects. The classes corresponding to these objects are part of a *Julie Lab UIMA type systems*<sup>5</sup>.

The wrapper comes as a UIMA pear file. Run the Pear-Installer (e.g., `./runPearInstaller.sh` for Linux) from your UIMA-bin directory. After installation, you will find a subfolder `desc` in you installation folder. This directory contains a descriptor `SentenceAnnotator.xml`. You may now e.g. run UIMA's Collection Proceessing Engine Configurator (`cpeGUI.sh`) and add the wrapper as a component into your NLP pipeline.

This pear package also contains a model for sentence splitting. The model was trained on a bio-medical corpus GENIA ([OTK02]). An accuracy of 99.0% is yielded on this data using 10-fold cross-validation. You will find the model trained on this data in the directory `resources`.

### 3 Using the AE – Descriptor Configuration

In UIMA, each component is configured by a descriptor in XML. In the following we describe how the descriptor required by this AE can be created with *Component Descriptor Editor*, an Eclipse plugin which is part of the UIMA SDK.

A descriptor contains information on different aspects. The following subsection refers to each sub aspect of the descriptor which is, in the Component Descriptor Editor, a separate *tabbed page*. For an indepth description of the respective configuration aspects or tabs, please refer to the *UIMA SKD User's Guide*<sup>6</sup>, especially chapter 12 on "Component Descriptor Editor User's Guide".

To define your descriptor go through each tabbed pages mentioned here, make your respective entries (especially in page *Parameter Settings* you will be able to configure OPENNLP SENTENCE SPLITTER to your needs) and save the descriptor as `SentenceAnnotator.xml`.

**Overview** This tab provides general information about the component. For the OpenNLP Sentence Splitter you need to provide the information as specified in Table 1.

**Aggregate** Not needed here, as this AE is a primitive.

**Parameters** See Table 2 for a specification of the configuration parameters of this AE. Do not check "Use Parameter Groups" in this tab.

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<sup>5</sup>The *Julie Lab UIMA type systems* can be obtained from <http://www.julielab.de/>

<sup>6</sup><http://incubator.apache.org/uima/>

Subsection	Key	Value
Implementation Details	Implementation Language	JAVA
	Engine Type	Primitive
Runtime Information	updates the CAS	yes
	multiple deployment allowed	yes
	outputs new CASes	no
	Name of the Java class file	<code>de.julielab.jules.ae.opennlp.SentenceAnnotator</code>
Overall Identification Information	Name	JULIELAB UIMA WRAPPER FOR OPENNLP SENTENCE SPLITTER
	Version	2.1
	Vendor	julielab
	Description	see above

Table 1: Overview/General Settings for AE.

Parameter Name	Parameter Type	Mandatory	Multivalued	Description
modelFile	String	yes	no	path to the OPENNLP SENTENCE SPLITTER model

Table 2: Parameters of this AE.

**Parameter Settings** The specific parameter settings are filled in here. For each of the parameters defined in 3, add the respective values here (has to be done at least for each parameter that is defined as mandatory). See Table 3 for the respective parameter settings of this AE.

Parameter Name	Parameter Syntax	Example
modelFile	model.bin.gz	resources/SentDetectGenia.bin.gz

Table 3: Parameter settings of this AE.

**Type System** On this page, go to *Imported Type* and add the *julie-morpho-syntax-types.xml* type system.. (Use “Import by Location”).

**Capabilities** Nothing needs to be done here.

**Index** Nothing needs to be done here.

**Resources** Nothing needs to be done here.

## 4 Copyright and License

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The license is approved by the Open Source Initiative, and is available from their website at <http://www.opensource.org>.

## References

- [OTK02] Tomoko Ohta, Yuka Tateisi, and Jin-Dong Kim. The GENIA corpus: An annotated research abstract corpus in molecular biology domain. In M. Marcus, editor, *HLT 2002 – Human Language Technology Conference. Proceedings of the 2nd International Conference on Human Language Technology Research*, pages 82–86. San Diego, Cal., USA, March 24-27, 2002. San Francisco, CA: Morgan Kaufmann, 2002.