



NLP Package

Readme

Version 1.0
5/31/2021

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1. Introduction

This document contains all essential information for the user to make full use of this Automation 360 Package. It includes a description of the functions and capabilities and step-by-step procedures for setup & configuration of the Package.

1.1 Overview

Natural Language Processing (NLP) is a subset of Machine Learning that attempts to perform linguistic analysis that helps machines “read” and understand text. The NLP Package for Automation 360 includes 3 actions that enable bot builders to leverage NLP capabilities through the use of the Stanford NLP pre-trained NLP library.

1.2 Use cases

The NLP Package from Automation Anywhere can be used by bot builders to try to make sense of free form text. Use cases include:

- Determining if a customer review, email, or social media mention represents a positive or negative sentiment about the organization
- Evaluating an email or text body of an incoming message to identify the named entities represented in the text.
- Assessing a body of text to extract the parts of speech to include things like pro-nouns, proper nouns, verbs, etc.

2. Requirements & Prerequisites

2.1 System Requirements

[Automation 360 and Community Edition device requirements.](#)

Review the machine hardware specifications, operating system versions, and browser types supported by Automation Anywhere Enterprise for creating and running bots and command packages as an Automation 360 or Community Edition user on your local machine.

This package leverages the Stanford NLP library. For more details on this library, check out [The Stanford Natural Language Processing Group](#).

2.2 Prerequisites

Automation 360

Windows Bot Runner

3. Getting Started

3.1 Quick Start

3.1.1 Setup

1. Install the package from Bot Store into your Control Room
2. Validate/Enable the package named **Natural Language Processing** has been installed and set as default.
 - a. It should install/enable itself upon install of the Bot Store package, but just triple check to be sure.

3.1.2 Configuration and Use

There are 3 actions that make up this package:

1. **Sentiment Analysis:** The Sentiment Analysis action will attempt to score the sentiment of provided text as having a positive, negative, or neutral sentiment. The returned value from this action will be a number representing the sentiment of the provided text. This number will be within the range of -1.00 to 1.00 where a score closer to -1.00 represents a negative sentiment, a score closer to 0.00 represents a neutral sentiment, and a score closer to 1.00 represents a positive sentiment.
 - a. This action leverages the Stanford NLP library – which uses a pre-trained NLP model. Should you be analyzing a large body of text (an email, or a customer review for example) you may play around with feeding the action individual sentences vs a full body of text to see the analysis it gives each way.
 - b. Its additionally important that you test the engine against text that you have manually validated the sentiment of to ensure that its analysis is in line with your expectation.
2. **Parts of Speech Detection:** The Parts of Speech Detection action takes in text as an input, and returns the evaluation of that text as a table with the ID, word, and entity for each row of the table. The entity tags used for each piece of text come from the University of Pennsylvania Treebank Project. Their Tag and Description values are as follows:

| Number | Tag | Description |
|--------|-----|--|
| 1 | CC | Coordinating conjunction |
| 2 | CD | Cardinal number |
| 3 | DT | Determiner |
| 4 | EX | Existential <i>there</i> |
| 5 | FW | Foreign word |
| 6 | IN | Preposition or subordinating conjunction |
| 7 | JJ | Adjective |

| | | |
|----|-------|---------------------------------------|
| 8 | JJR | Adjective, comparative |
| 9 | JJS | Adjective, superlative |
| 10 | LS | List item marker |
| 11 | MD | Modal |
| 12 | NN | Noun, singular or mass |
| 13 | NNS | Noun, plural |
| 14 | NNP | Proper noun, singular |
| 15 | NNPS | Proper noun, plural |
| 16 | PDT | Predeterminer |
| 17 | POS | Possessive ending |
| 18 | PRP | Personal pronoun |
| 19 | PRP\$ | Possessive pronoun |
| 20 | RB | Adverb |
| 21 | RBR | Adverb, comparative |
| 22 | RBS | Adverb, superlative |
| 23 | RP | Particle |
| 24 | SYM | Symbol |
| 25 | TO | <i>to</i> |
| 26 | UH | Interjection |
| 27 | VB | Verb, base form |
| 28 | VBD | Verb, past tense |
| 29 | VBG | Verb, gerund or present participle |
| 30 | VCN | Verb, past participle |
| 31 | VBP | Verb, non-3rd person singular present |
| 32 | VBZ | Verb, 3rd person singular present |
| 33 | WDT | Wh-determiner |
| 34 | WP | Wh-pronoun |
| 35 | WP\$ | Possessive wh-pronoun |
| 36 | WRB | Wh-adverb |

3. **Entity Recognition:** The Entity Recognition action takes in text as an input, and returns the evaluation of that text as a table with the ID, word, and entity for each row of the table. The possible entity tags used for each piece of text are as follows:

- a. Location (including country, state/province, and city tags where applicable)
- b. Organization
- c. Date
- d. Money
- e. Person
- f. Percent
- g. Time

4. Support & FAQs

4.1 Support

Free bots are not officially supported through Automation Anywhere. You can get access to Community Support through the following channels:

- You can get access to Community Support, connecting with other Automation Anywhere customers and developers on [APeople](#) – the [Bot Building Forum](#), the [Bot Store Support Forum](#), or the [Developers Everywhere Group](#).
- Automation Anywhere also provides a [Product Documentation portal](#) which can be accessed for more information about our products and guidance on [Enterprise A2019](#).
- Additionally, the source code for most Automation Anywhere free bots is [included on our GitHub page](#).

4.2 FAQs

For questions relating to Enterprise A2019: See the [Enterprise A2019 FAQs](#).

Appendix A: Record of Changes

| No. | Version Number | Date of Change | Author | Notes |
|------------|----------------|-------------------|--------------------|------------------------------------|
| <i>1.0</i> | <i>1.0</i> | <i>05/21/2021</i> | <i>Micah Smith</i> | <i>Initial NLP Package Release</i> |

Appendix B: References

| No. | Topic | Reference Link |
|-----|--|----------------------------|
| 1 | Overview of Automation 360 | Click here |
| 2 | Guidance: Building basic Automation 360 bots | Click here |
| 3 | Guidance: Building Automation 360 packages | Click here |
| 4 | APeople Community Forum | Click here |
| 5 | Automation Anywhere University | Click here |