Web Semântica e Processamento de Linguagem Natural na prática

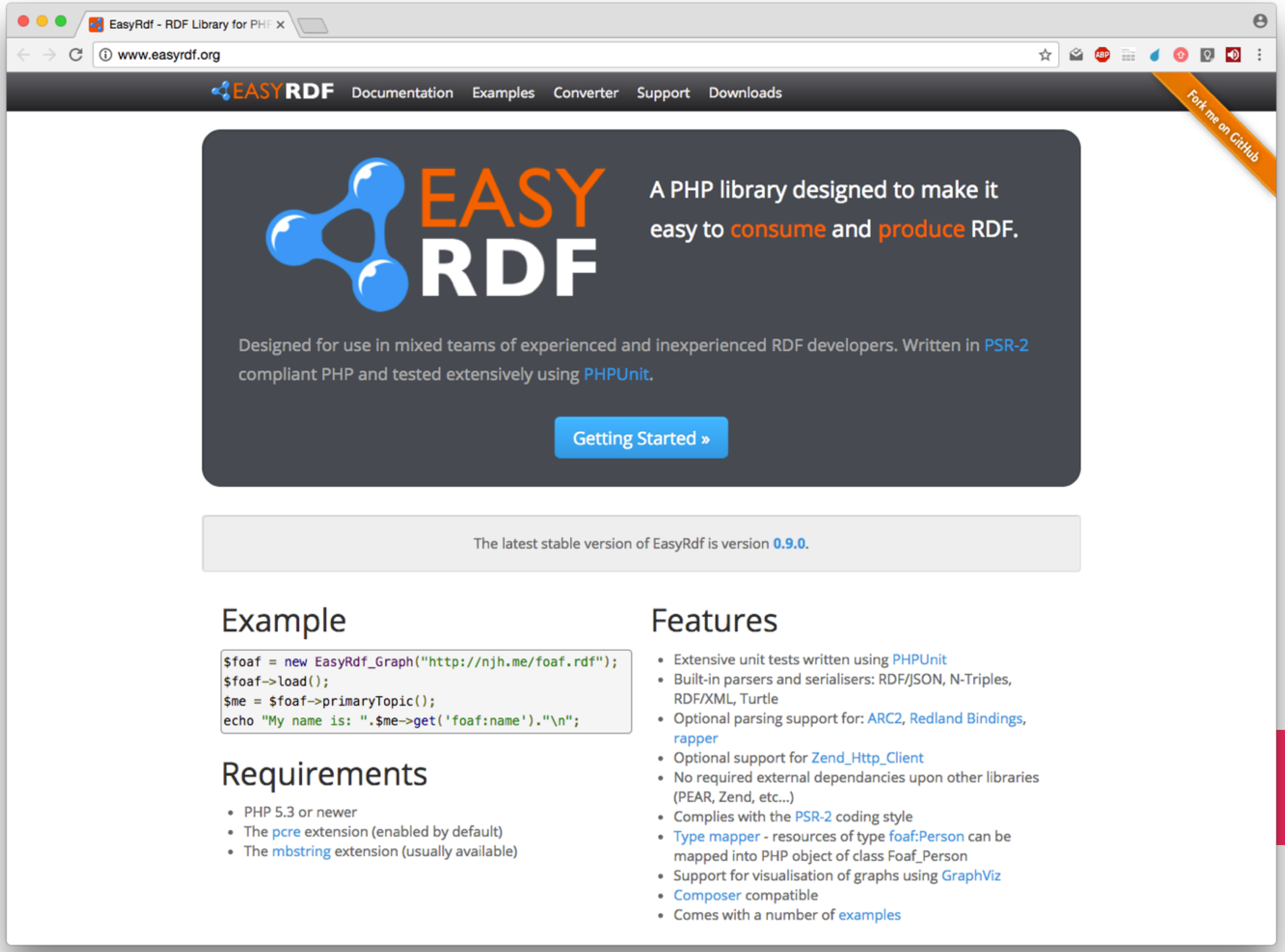
Newton Calegari

PUC-SP

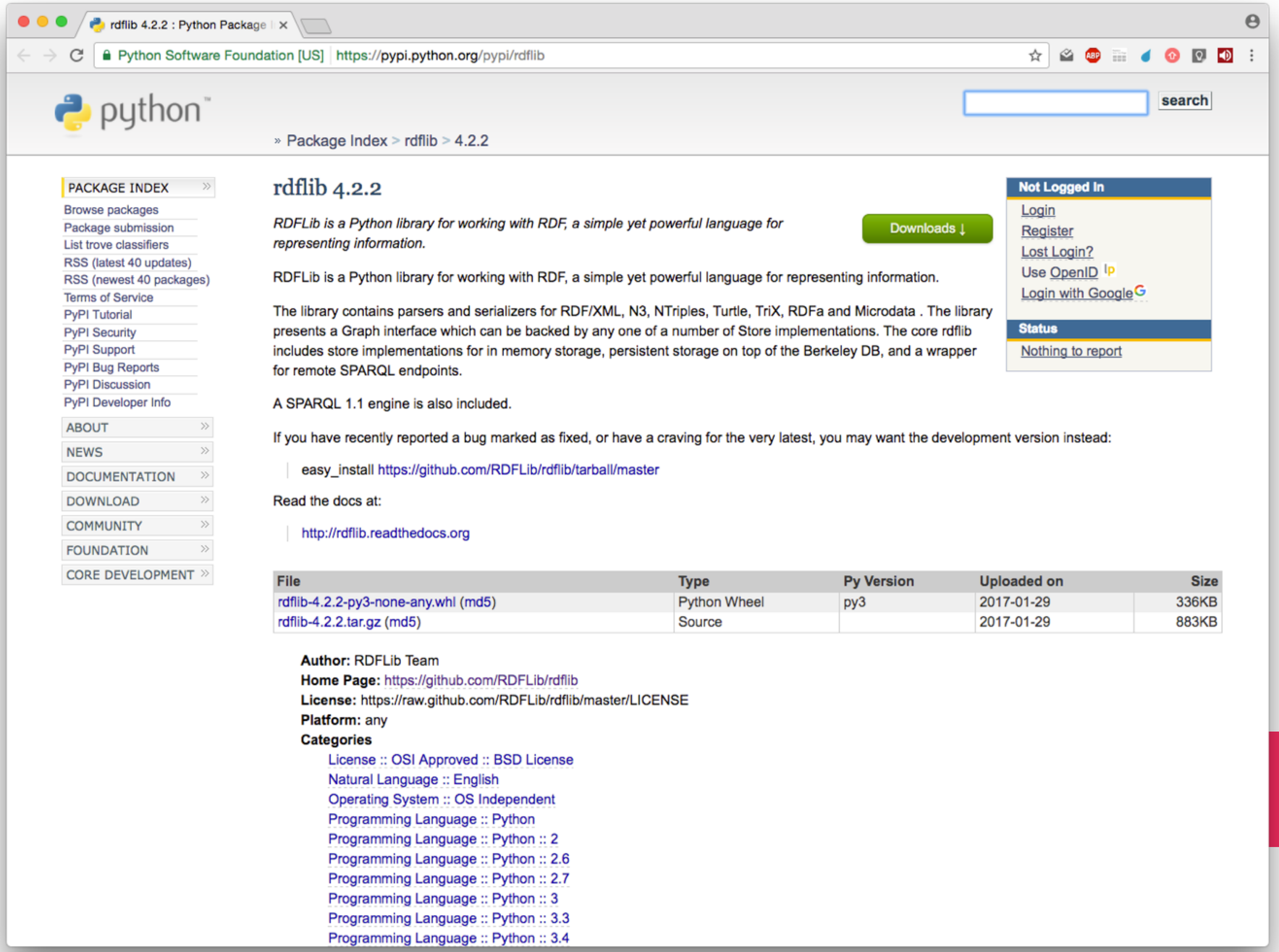
Desenvolvimento de aplicações semânticas

Frameworks com suporte para RDF
Triple stores

Frameworks RDF e *Triple stores*


EasyRdf - RDF Library for PHP
www.easyrdf.org
EASYRDF
Documentation
Examples
Converter
Support
Downloads
Fork me on GitHub
EASY RDF
A PHP library designed to make it easy to consume and produce RDF.
Designed for use in mixed teams of experienced and inexperienced RDF developers. Written in PSR-2 compliant PHP and tested extensively using PHPUnit.
Getting Started »
The latest stable version of EasyRdf is version 0.9.0.
Example
$foaf = new EasyRdf_Graph("http://njh.me/foaf.rdf");
$foaf->load();
$me = $foaf->primaryTopic();
echo "My name is: ".$me->get('foaf:name')."\n";
Requirements
PHP 5.3 or newer
The pcre extension (enabled by default)
The mbstring extension (usually available)
Features
Extensive unit tests written using PHPUnit
Built-in parsers and serialisers: RDF/JSON, N-Triples, RDF/XML, Turtle
Optional parsing support for: ARC2, Redland Bindings, rapper
Optional support for Zend_Http_Client
No required external dependancies upon other libraries (PEAR, Zend, etc...)
Complies with the PSR-2 coding style
Type mapper - resources of type foaf:Person can be mapped into PHP object of class Foaf_Person
Support for visualisation of graphs using GraphViz
Composer compatible
Comes with a number of examples

PHP


rdflib 4.2.2 : Python Package
Python Software Foundation [US] https://pypi.python.org/pypi/rdflib
python
search
» Package Index > rdflib > 4.2.2
PACKAGE INDEX
Browse packages
Package submission
List trove classifiers
RSS (latest 40 updates)
RSS (newest 40 packages)
Terms of Service
PyPI Tutorial
PyPI Security
PyPI Support
PyPI Bug Reports
PyPI Discussion
PyPI Developer Info
ABOUT
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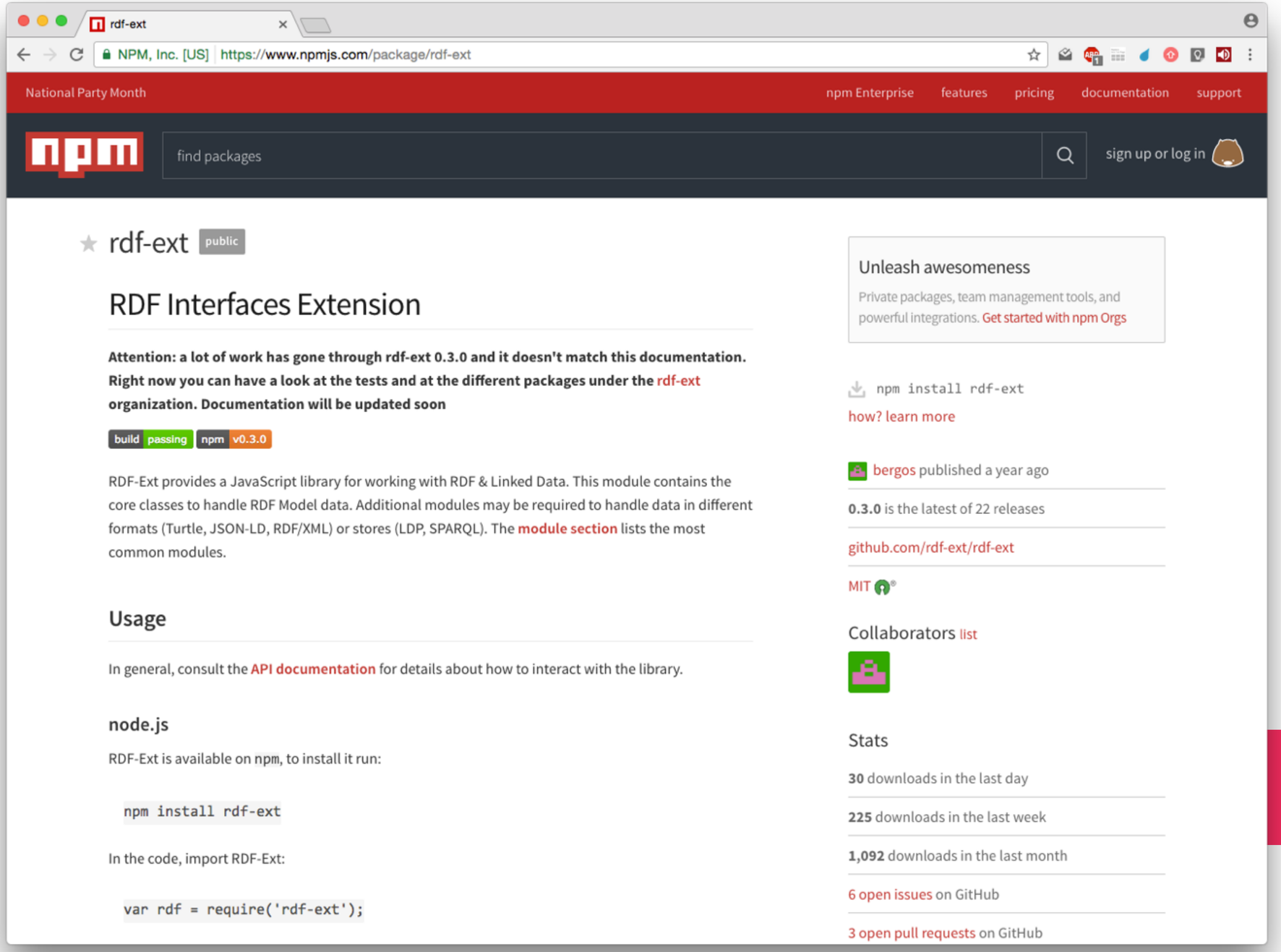
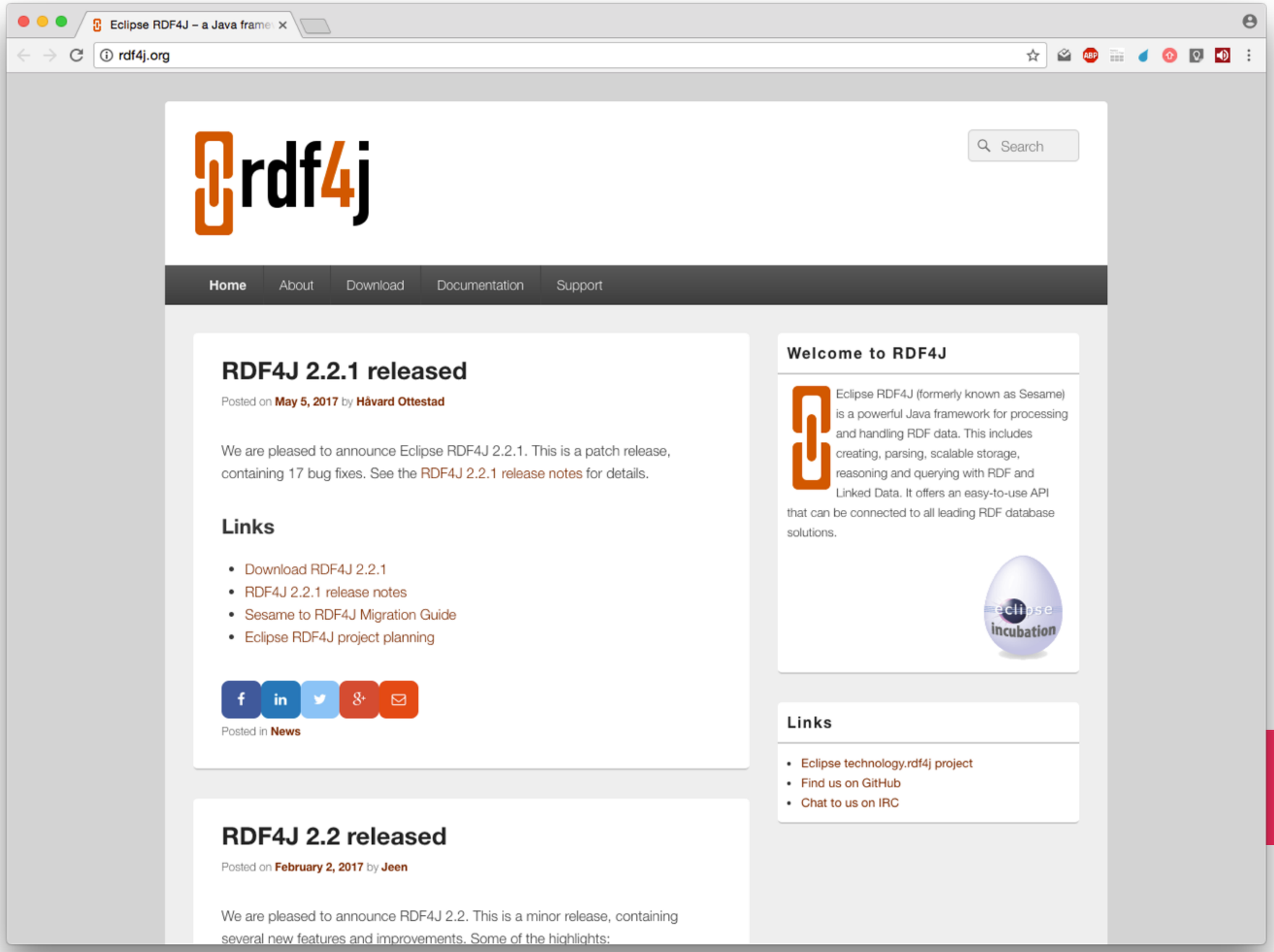
rdflib 4.2.2
RDFLib is a Python library for working with RDF, a simple yet powerful language for representing information.
Downloads ↓
RDFLib is a Python library for working with RDF, a simple yet powerful language for representing information.
The library contains parsers and serializers for RDF/XML, N3, NTriples, Turtle, TriX, RDFa and Microdata . The library presents a Graph interface which can be backed by any one of a number of Store implementations. The core rdflib includes store implementations for in memory storage, persistent storage on top of the Berkeley DB, and a wrapper for remote SPARQL endpoints.
A SPARQL 1.1 engine is also included.
If you have recently reported a bug marked as fixed, or have a craving for the very latest, you may want the development version instead:
easy_install https://github.com/RDFLib/rdflib/tarball/master
Read the docs at:
http://rdflib.readthedocs.org
Not Logged In
Login
Register
Lost Login?
Use OpenID
Login with Google
Status
Nothing to report
File Type Py Version Uploaded on Size
rdflib-4.2.2-py3-none-any.whl (md5) Python Wheel py3 2017-01-29 336KB
rdflib-4.2.2.tar.gz (md5) Source 2017-01-29 883KB
Author: RDFLib Team
Home Page: https://github.com/RDFLib/rdflib
License: https://raw.github.com/RDFLib/rdflib/master/LICENSE
Platform: any
Categories
License :: OSI Approved :: BSD License
Natural Language :: English
Operating System :: OS Independent
Programming Language :: Python
Programming Language :: Python :: 2
Programming Language :: Python :: 2.6
Programming Language :: Python :: 2.7
Programming Language :: Python :: 3
Programming Language :: Python :: 3.3
Programming Language :: Python :: 3.4

Python


rdf-ext
NPM, Inc. [US] https://www.npmjs.com/package/rdf-ext
National Party Month
npm Enterprise features pricing documentation support
npm
find packages
sign up or log in
rdf-ext public
RDF Interfaces Extension
Attention: a lot of work has gone through rdf-ext 0.3.0 and it doesn't match this documentation. Right now you can have a look at the tests and at the different packages under the rdf-ext organization. Documentation will be updated soon
build passing npm v0.3.0
RDF-Ext provides a JavaScript library for working with RDF & Linked Data. This module contains the core classes to handle RDF Model data. Additional modules may be required to handle data in different formats (Turtle, JSON-LD, RDF/XML) or stores (LDP, SPARQL). The module section lists the most common modules.
Usage
In general, consult the API documentation for details about how to interact with the library.
node.js
RDF-Ext is available on npm, to install it run:
npm install rdf-ext
In the code, import RDF-Ext:
var rdf = require('rdf-ext');
Unleash awesomeness
Private packages, team management tools, and powerful integrations. Get started with npm Orgs
npm install rdf-ext
how? learn more
bergos published a year ago
0.3.0 is the latest of 22 releases
github.com/rdf-ext/rdf-ext
MIT
Collaborators list
Stats
30 downloads in the last day
225 downloads in the last week
1,092 downloads in the last month
6 open issues on GitHub
3 open pull requests on GitHub

JS


Eclipse RDF4J – a Java frame
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RDF4J 2.2.1 released
Posted on May 5, 2017 by Håvard Ottestad
We are pleased to announce Eclipse RDF4J 2.2.1. This is a patch release, containing 17 bug fixes. See the RDF4J 2.2.1 release notes for details.
Links
Download RDF4J 2.2.1
RDF4J 2.2.1 release notes
Sesame to RDF4J Migration Guide
Eclipse RDF4J project planning
Posted in News
RDF4J 2.2 released
Posted on February 2, 2017 by Jeen
We are pleased to announce RDF4J 2.2. This is a minor release, containing several new features and improvements. Some of the highlights:
Welcome to RDF4J
Eclipse RDF4J (formerly known as Sesame) is a powerful Java framework for processing and handling RDF data. This includes creating, parsing, scalable storage, reasoning and querying with RDF and Linked Data. It offers an easy-to-use API that can be connected to all leading RDF database solutions.
eclipse incubation
Links
Eclipse technology.rdf4j project
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Chat to us on IRC

Java

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Build 360° Data View!

Establish Master Data as Linked Data.

Leverage Legacy Data as Knowledge Graph.

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Email *

Company *

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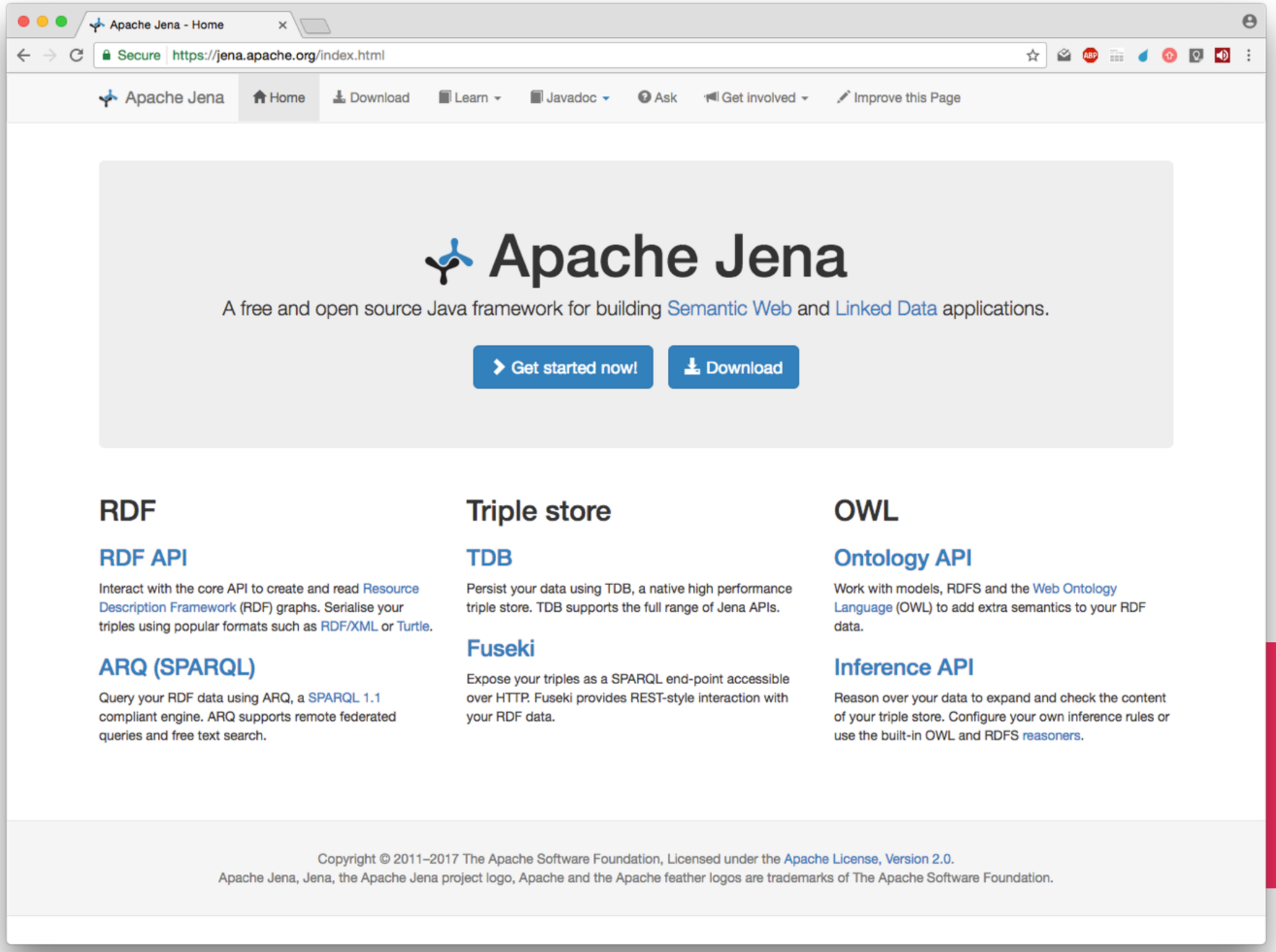
RDF store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Secure https://jena.apache.org/index.html
Apache Jena
Home
Download
Learn
Javadoc
Ask
Get involved
Improve this Page
Apache Jena
A free and open source Java framework for building Semantic Web and Linked Data applications.
Get started now!
Download
RDF
RDF API
Interact with the core API to create and read Resource Description Framework (RDF) graphs. Serialise your triples using popular formats such as RDF/XML or Turtle.
ARQ (SPARQL)
Query your RDF data using ARQ, a SPARQL 1.1 compliant engine. ARQ supports remote federated queries and free text search.
Triple store
TDB
Persist your data using TDB, a native high performance triple store. TDB supports the full range of Jena APIs.
Fuseki
Expose your triples as a SPARQL end-point accessible over HTTP. Fuseki provides REST-style interaction with your RDF data.
OWL
Ontology API
Work with models, RDFS and the Web Ontology Language (OWL) to add extra semantics to your RDF data.
Inference API
Reason over your data to expand and check the content of your triple store. Configure your own inference rules or use the built-in OWL and RDFS reasoners.
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RDF store

Processamento de Linguagem Natural

Conceitos
Casos de uso
Frameworks e aplicações

Processamento de Linguagem Natural

Natural Language Processing

sub-área da **Ciência da Computação** e da **Inteligência Artificial** que investiga problemas de **geração** e **compreensão** de informações **expressas em linguagem natural**

som

fonologia

estrutura

significado

som

estrutura

sintaxe

significado

som

estrutura

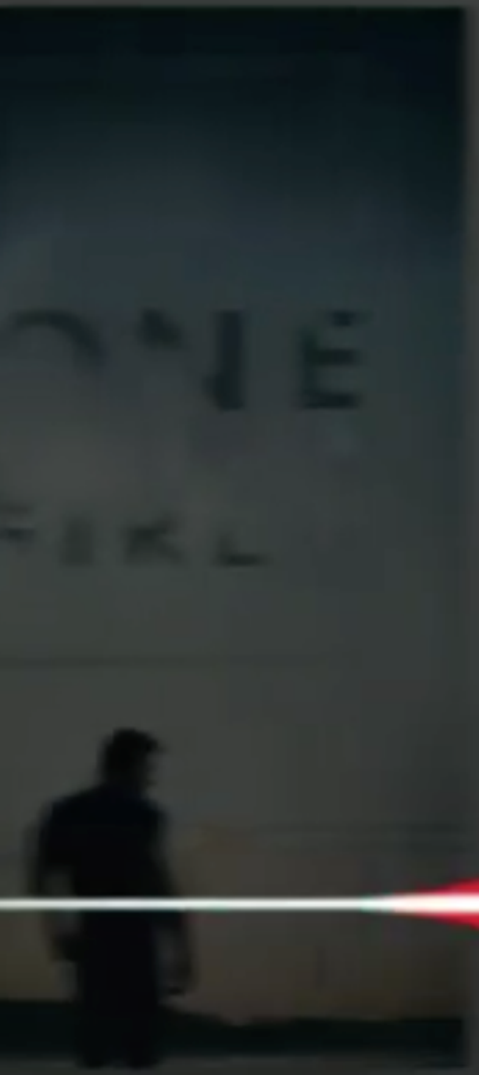
significado

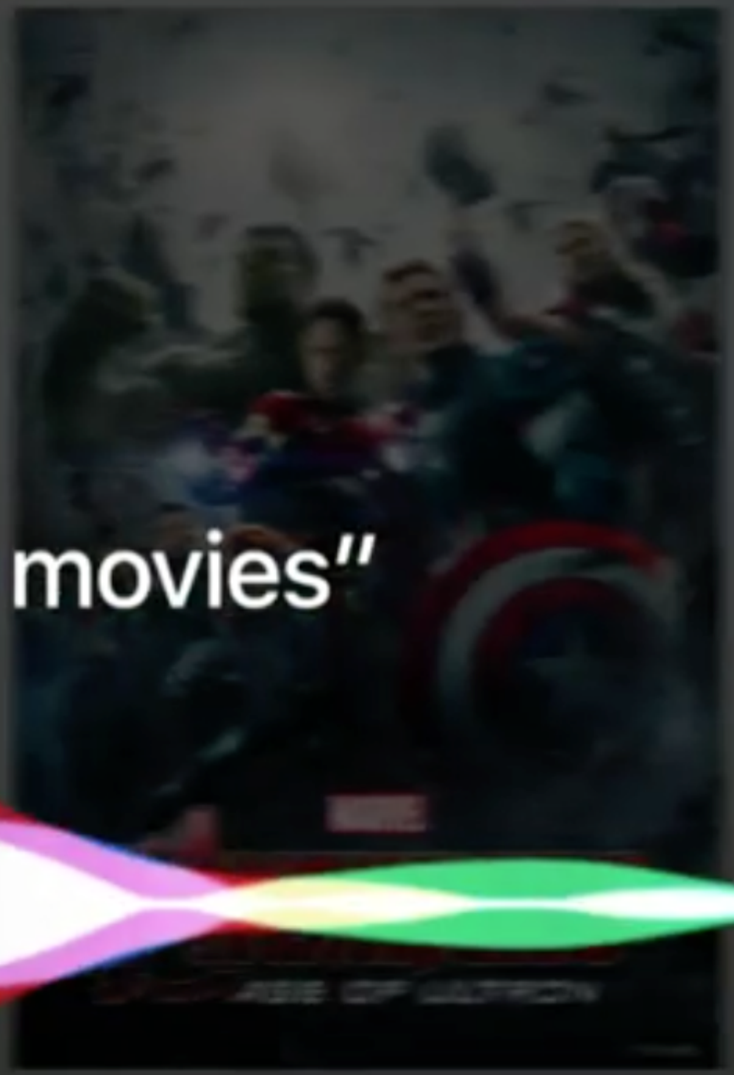
semântica

Casos de uso de PLN

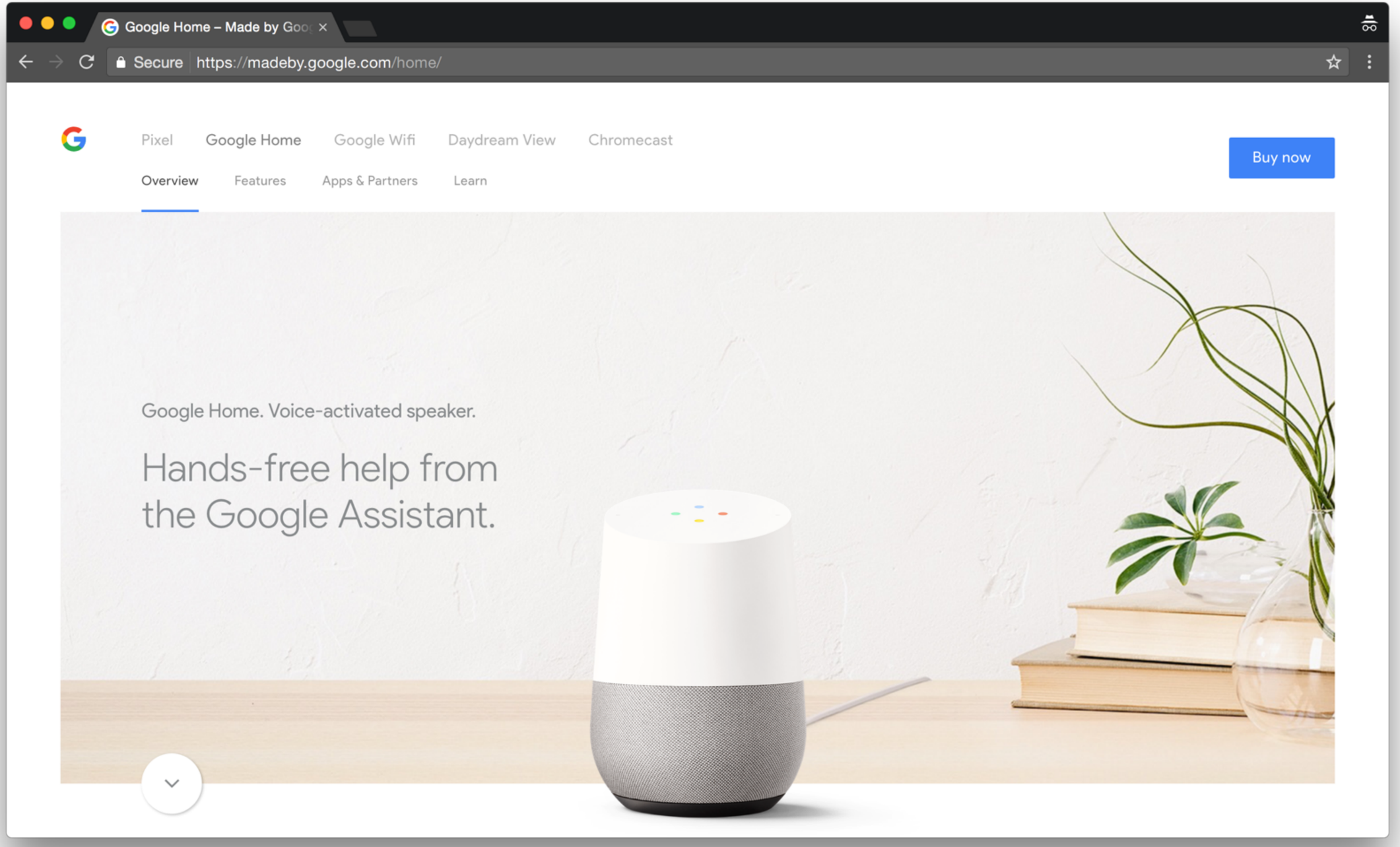

9:23 AM
What can I help you with?

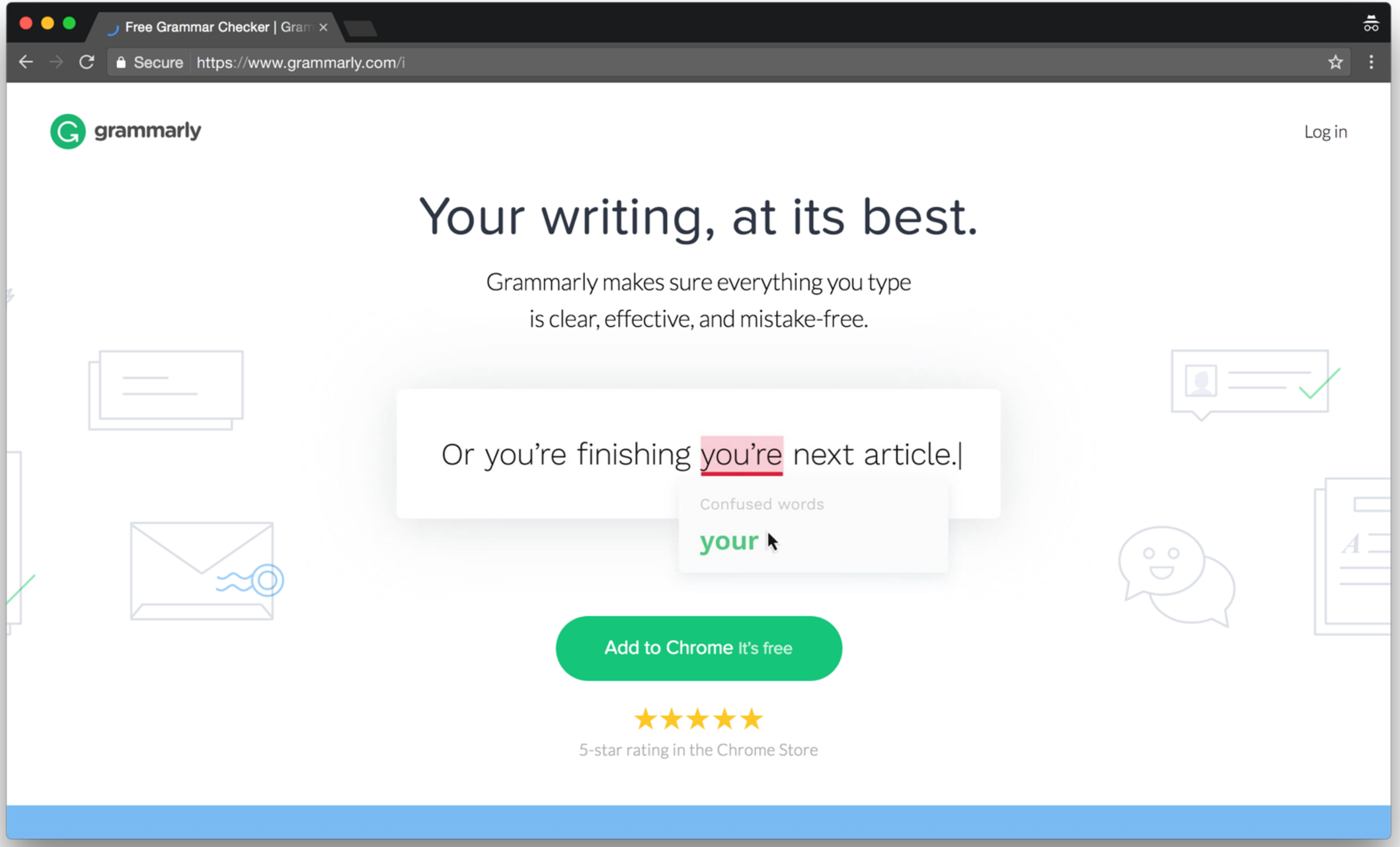
Top Movies





"Show me family movies"


Google Home – Made by Goo
Secure https://madeby.google.com/home/
Pixel
Google Home
Google Wifi
Daydream View
Chromecast
Overview
Features
Apps & Partners
Learn
Buy now
Google Home. Voice-activated speaker.
Hands-free help from the Google Assistant.


Free Grammar Checker | Gram
Secure https://www.grammarly.com/i
grammarly
Log in
Your writing, at its best.
Grammarly makes sure everything you type
is clear, effective, and mistake-free.
Or you're finishing you're next article.
Confused words
your
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- Filtros SPAM
- Correções ortográficas
- Análise de sentimento
- *Question Answering*
- *Text summarization* (geração de resumo e sumários)
- Reconhecimento de voz
- Extração de informação

...

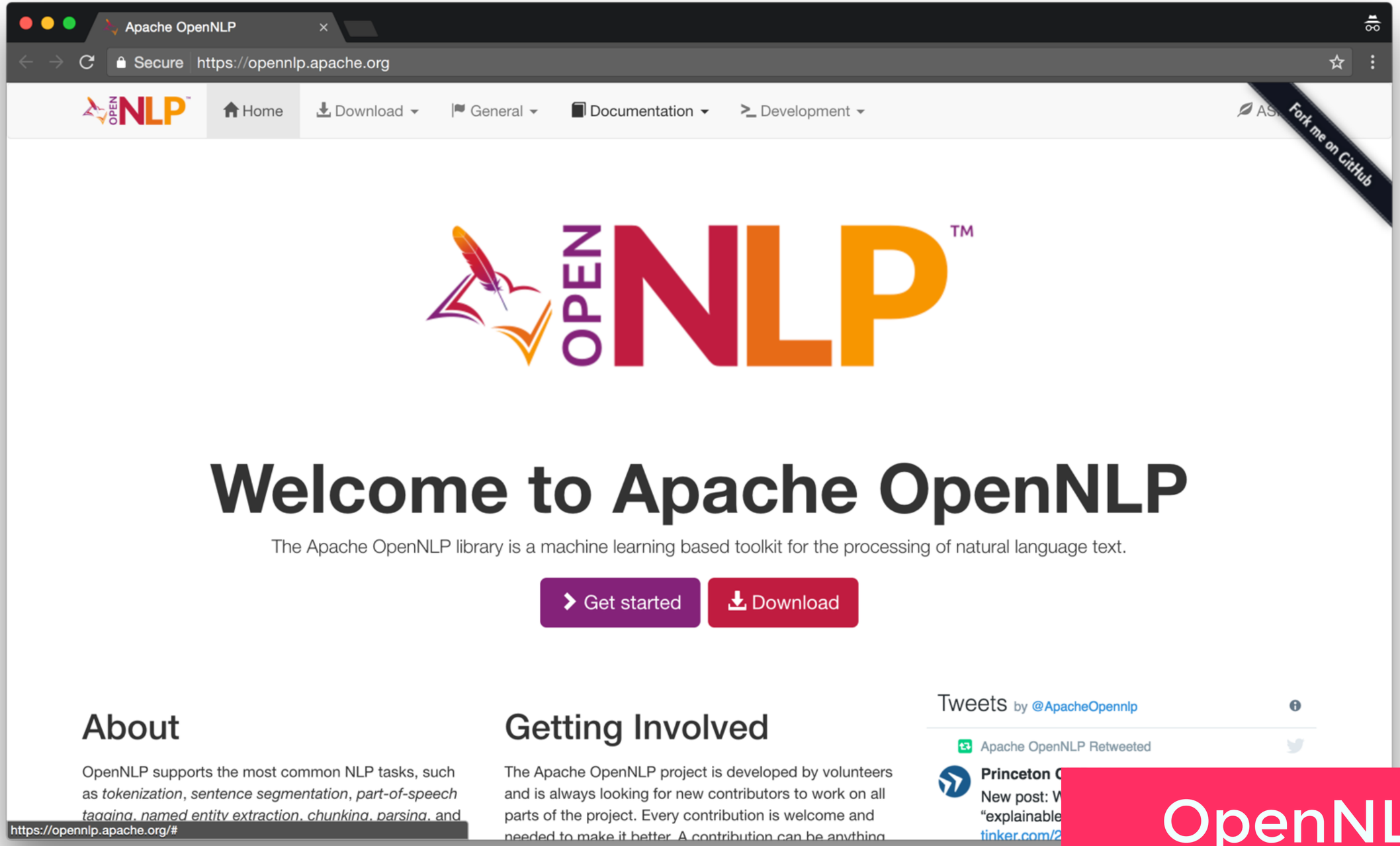
natureza dos dados

estruturados

semi-estruturados

não-estruturados

Ferramentas PLN


Apache OpenNLP
Secure https://opennlp.apache.org
Home
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Documentation
Development
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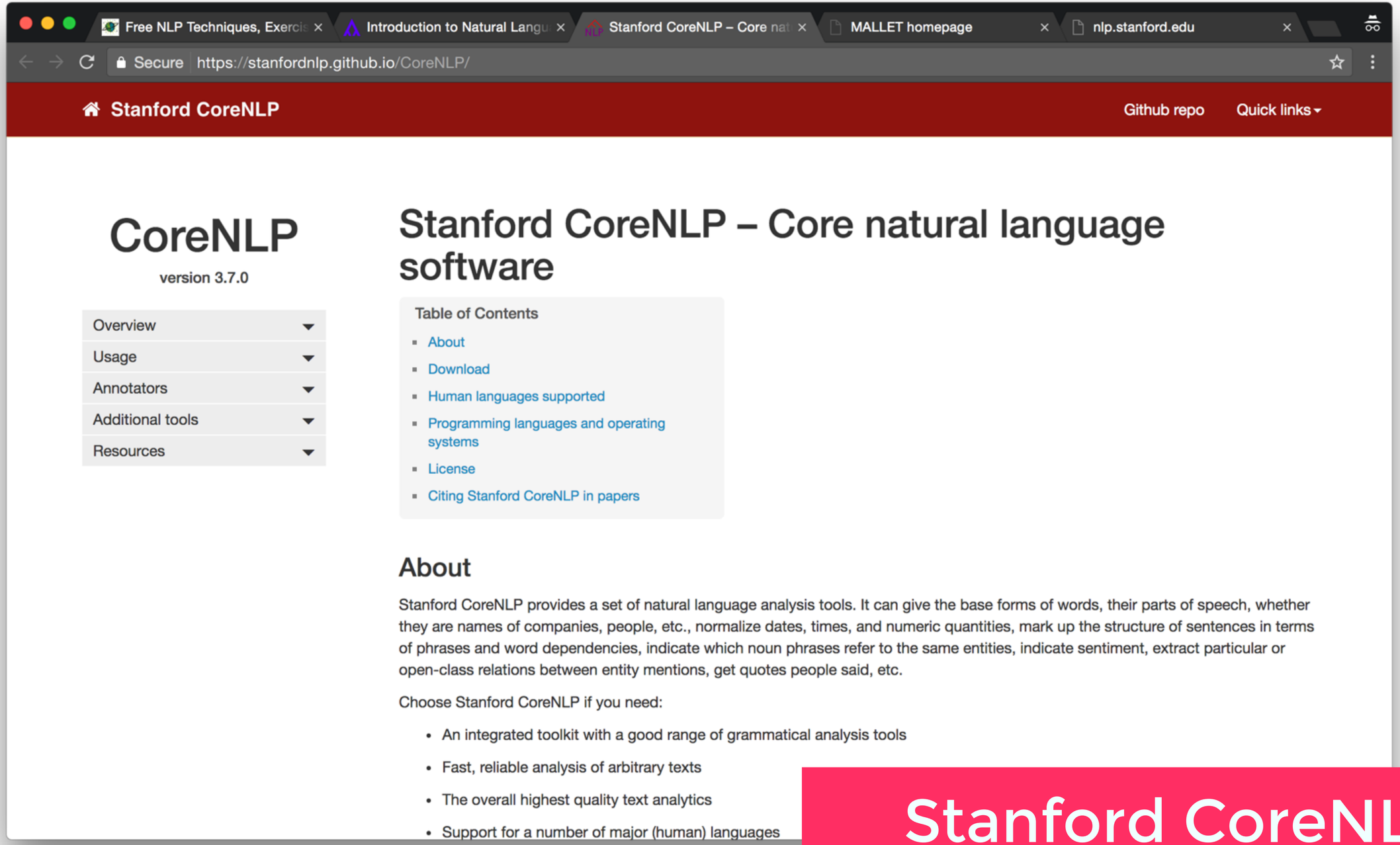
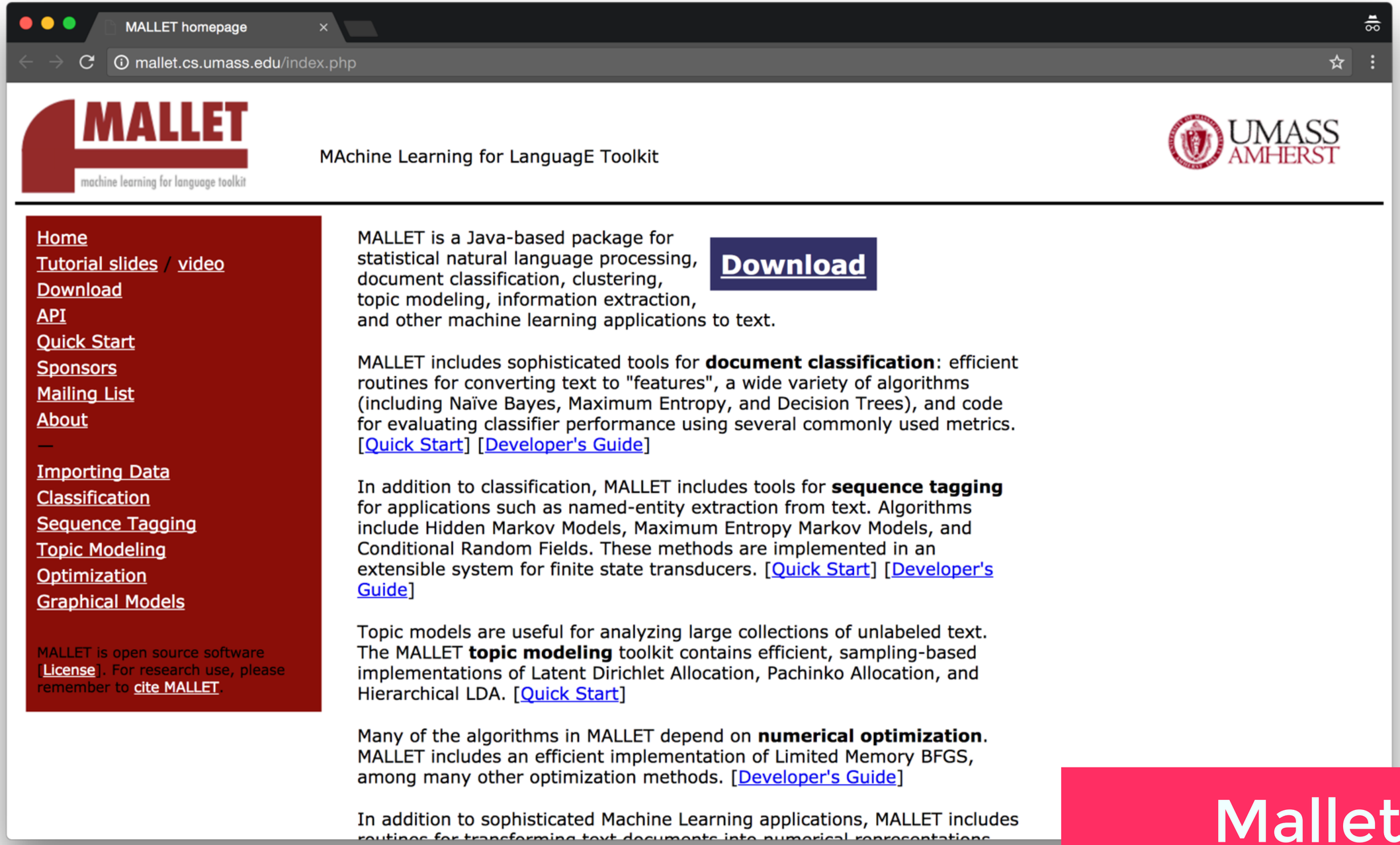
Welcome to Apache OpenNLP
The Apache OpenNLP library is a machine learning based toolkit for the processing of natural language text.
Get started
Download
About
OpenNLP supports the most common NLP tasks, such as tokenization, sentence segmentation, part-of-speech tagging, named entity extraction, chunking, parsing, and
Getting Involved
The Apache OpenNLP project is developed by volunteers and is always looking for new contributors to work on all parts of the project. Every contribution is welcome and needed to make it better. A contribution can be anything
Tweets by @ApacheOpennlp
Apache OpenNLP Retweeted
https://opennlp.apache.org/#

OpenNLP



Stanford CoreNLP


MALLET homepage
mallet.cs.umass.edu/index.php
MALLET
machine learning for language toolkit
MAchine Learning for LanguagE Toolkit
UMASS AMHERST
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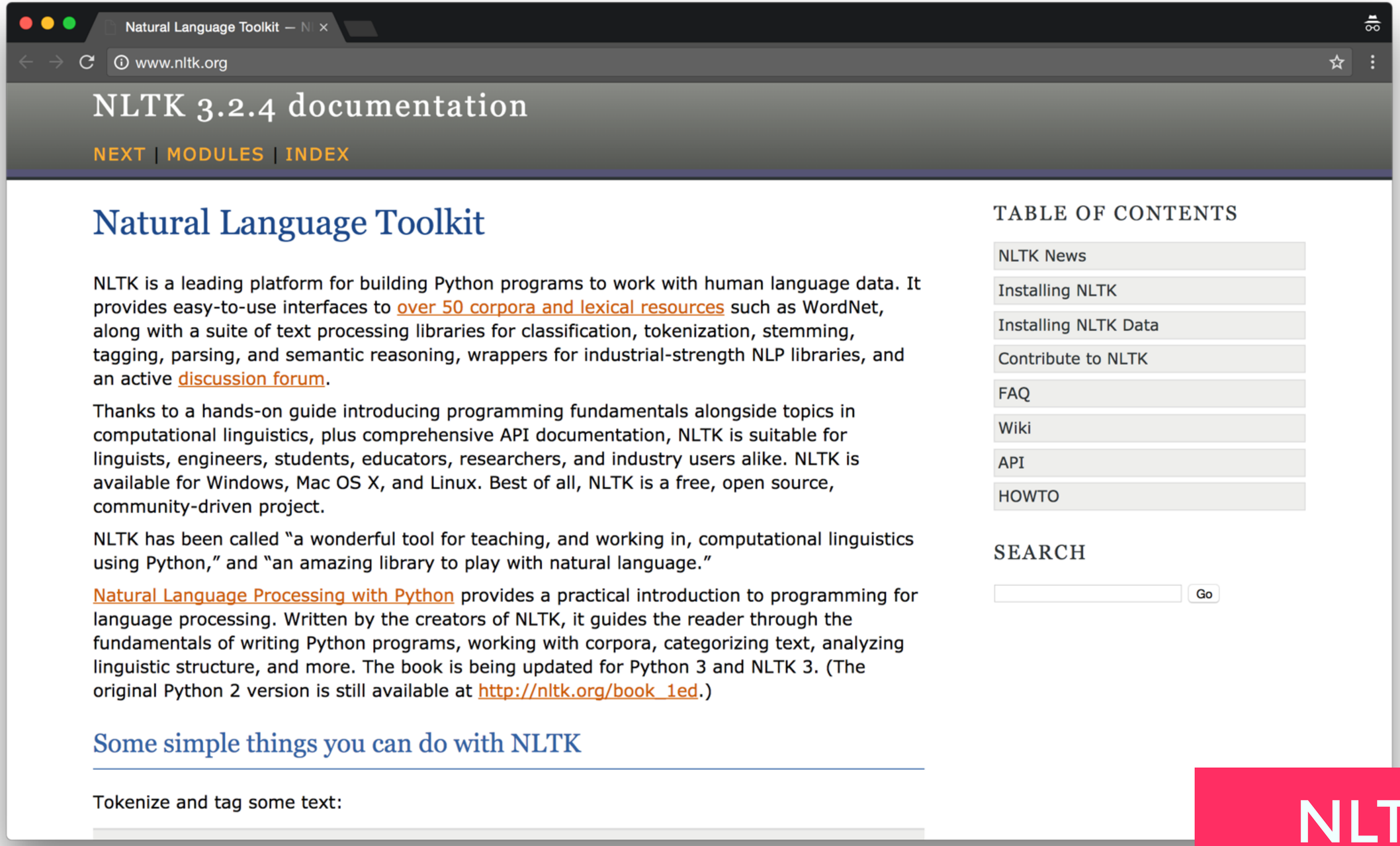
Tutorial slides / video
Download
API
Quick Start
Sponsors
Mailing List
About
—
Importing Data
Classification
Sequence Tagging
Topic Modeling
Optimization
Graphical Models
MALLET is open source software [License]. For research use, please remember to cite MALLET.
MALLET is a Java-based package for statistical natural language processing, document classification, clustering, topic modeling, information extraction, and other machine learning applications to text.
Download
MALLET includes sophisticated tools for document classification: efficient routines for converting text to "features", a wide variety of algorithms (including Naïve Bayes, Maximum Entropy, and Decision Trees), and code for evaluating classifier performance using several commonly used metrics. [Quick Start] [Developer's Guide]
In addition to classification, MALLET includes tools for sequence tagging for applications such as named-entity extraction from text. Algorithms include Hidden Markov Models, Maximum Entropy Markov Models, and Conditional Random Fields. These methods are implemented in an extensible system for finite state transducers. [Quick Start] [Developer's Guide]
Topic models are useful for analyzing large collections of unlabeled text. The MALLET topic modeling toolkit contains efficient, sampling-based implementations of Latent Dirichlet Allocation, Pachinko Allocation, and Hierarchical LDA. [Quick Start]
Many of the algorithms in MALLET depend on numerical optimization. MALLET includes an efficient implementation of Limited Memory BFGS, among many other optimization methods. [Developer's Guide]
In addition to sophisticated Machine Learning applications, MALLET includes

Mallet


Natural Language Toolkit
www.nltk.org
NLTK 3.2.4 documentation
NEXT | MODULES | INDEX
Natural Language Toolkit
NLTK is a leading platform for building Python programs to work with human language data. It provides easy-to-use interfaces to over 50 corpora and lexical resources such as WordNet, along with a suite of text processing libraries for classification, tokenization, stemming, tagging, parsing, and semantic reasoning, wrappers for industrial-strength NLP libraries, and an active discussion forum.
Thanks to a hands-on guide introducing programming fundamentals alongside topics in computational linguistics, plus comprehensive API documentation, NLTK is suitable for linguists, engineers, students, educators, researchers, and industry users alike. NLTK is available for Windows, Mac OS X, and Linux. Best of all, NLTK is a free, open source, community-driven project.
NLTK has been called "a wonderful tool for teaching, and working in, computational linguistics using Python," and "an amazing library to play with natural language."
Natural Language Processing with Python provides a practical introduction to programming for language processing. Written by the creators of NLTK, it guides the reader through the fundamentals of writing Python programs, working with corpora, categorizing text, analyzing linguistic structure, and more. The book is being updated for Python 3 and NLTK 3. (The original Python 2 version is still available at http://nltk.org/book_1ed.)
Some simple things you can do with NLTK
Tokenize and tag some text:
TABLE OF CONTENTS
NLTK News
Installing NLTK
Installing NLTK Data
Contribute to NLTK
FAQ
Wiki
API
HOWTO
SEARCH
Go

NLTK

Python NLTK

```
import nltk
```

```
from nltk import tokenize
```

```
from nltk.tokenize import word_tokenize, sent_tokenize
```

```
from nltk.tag import pos_tag
```

Tag	Description
CC	Coordinating conjunction
CD	Cardinal number
DT	Determiner
EX	Existential there
FW	Foreign word
IN	Preposition or subordinating conjunction
JJ	Adjective
JJR	Adjective, comparative
JJS	Adjective, superlative
LS	List item marker
MD	Modal
NN	Noun, singular or mass
NNS	Noun, plural
NNP	Proper noun, singular
NNPS	Proper noun, plural
PDT	Predeterminer
POS	Possessive ending
PRP	Personal pronoun

Tag	Description
PRP$	Possessive pronoun
RB	Adverb
RBR	Adverb, comparative
RBS	Adverb, superlative
RP	Particle
SYM	Symbol
TO	to
UH	Interjection
VB	Verb, base form
VBD	Verb, past tense
VBG	Verb, gerund or present participle
VBN	Verb, past participle
VBP	Verb, non3rd person singular present
VBZ	Verb, 3rd person singular present
WDT	Whdeterminer
WP	Whpronoun
WP$	Possessive whpronoun
WRB	Whadverb