

Web Semântica e Processamento de Linguagem Natural na prática

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PUC-SP

Objetivo

O objetivo do curso é apresentar conceitos e fundamentos de Web Semântica e direcionar para o uso e implementações práticas das tecnologias que fazem parte desta abordagem.

Introdução e contexto

O surgimento da World Wide Web

A evolução da Web e o desenvolvimento de aplicações

A proposta da Web Semântica

Web Semântica e contexto

Os fundamentos da Web Semântica

A pilha tecnológica da Web Semântica

Ontologias e Vocabulários

Estado da arte e exemplos

RDF, Grafos, Linguagens e SPARQL

Triplas RDF e Grafos

Linguagens de serialização

Triple stores (Banco de Dados)

Queries SPARQL

JSON para Linked Data

Especificação JSON-LD
Aplicando JSON-LD e RDFa

Desenvolvimento de aplicações semânticas

Frameworks com suporte para RDF

Triple stores

Processamento de Linguagem Natural

Conceitos

Casos de uso

Frameworks e aplicações

Processamento de Linguagem Natural

Python NLTK
Exercícios

Google Natural Language API

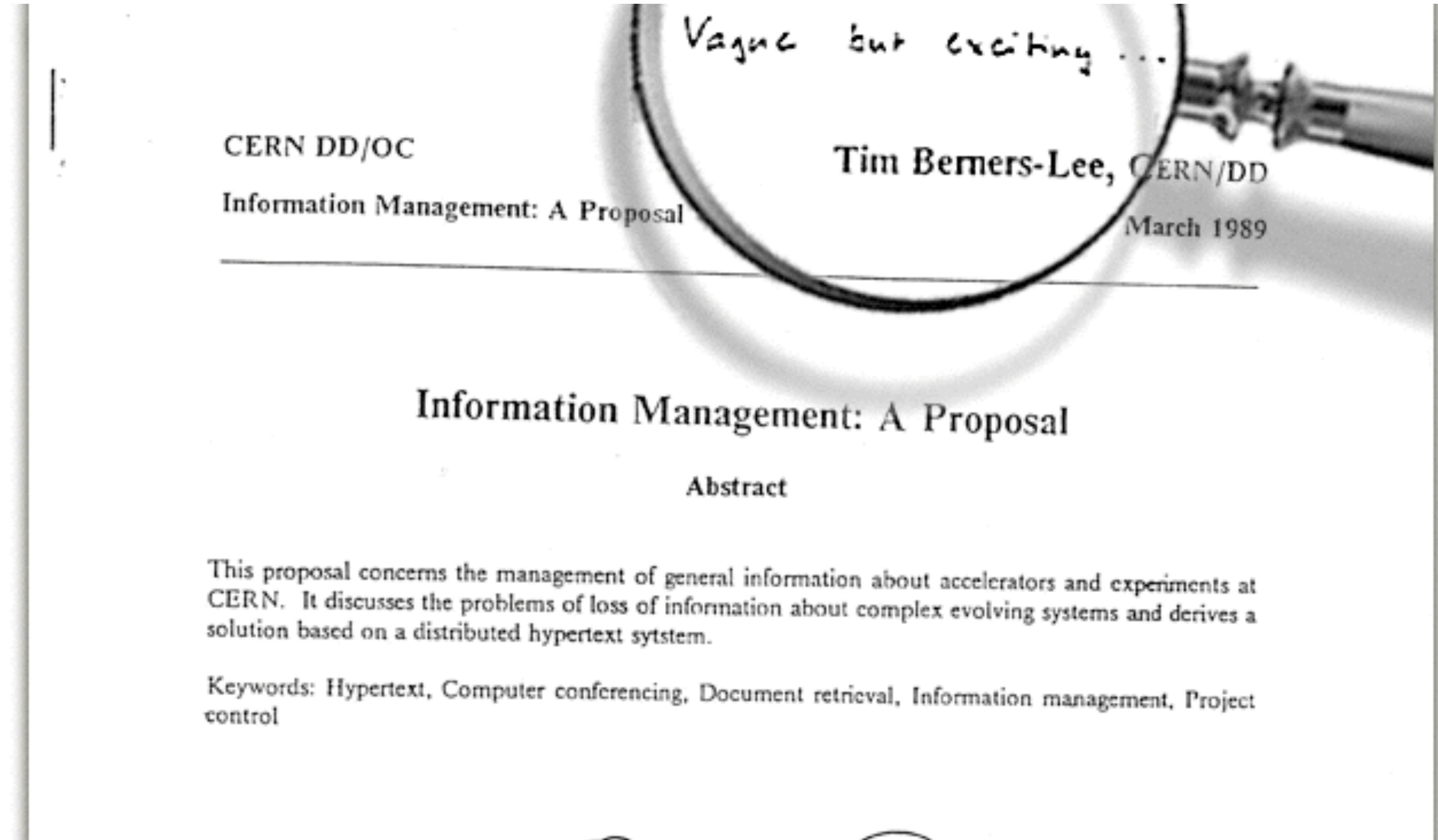
Tarefas NLP

Análise de sentimento

Reconhecimento de entidades em texto

Exercícios

WORLD WIDE WEB VAGUE BUT EXCITING



<http://info.cern.ch/Proposal.html>

WORLD WIDE WEB TECNOLOGIAS FUNDAMENTAIS

- Páginas web (documentos de hipertexto)
- Protocolo HTTP
- Linguagem HTML
- Identificador de recursos (URI)

<http://info.cern.ch> - home of the first website

From here you can:

- [Browse the first website](#)
- [Browse the first website using the line-mode browser simulator](#)
- [Learn about the birth of the web](#)
- [Learn about CERN, the physics laboratory where the web was born](#)



Web

of



Documents

Data

Things

Web Semântica

Berners-Lee et al., 2001

“The Semantic Web aims to describe the meaning of information published on the Web to enable retrieval based on an accurate understanding of that information’s semantics”

(RODRÍGUEZ-ROCHA et al., 2015)

LONG READ | SECRETS OF THE MOST PRODUCTIVE PEOPLE

At Sundar Pichai's Google, AI Is Everything—And Everywhere

A year into his tenure as CEO of Google, the low-key company is, where it's going, and how it gets things



The wide scope represented by that lineup may suggest that Pichai isn't picking his competitive battles. But his key ambitions are bound by a core prediction: that the world is moving from the smartphone age into, in Pichai's phrase, an "AI-first" era, in which Google products will help people accomplish tasks in increasingly sophisticated, even anticipatory ways. The Pixel phones and Google Home, for instance, are the first devices with embedded support for Google Assistant, a rival to Apple's Siri and Amazon's Alexa that is designed not only to handle straightforward commands but also fuzzier requests such as "Play that

EXCLUSIVE: WARP DRIVE UNDERWATER • ARCTIC OIL VS. WILDLIFE

SCIENTIFIC AMERICAN

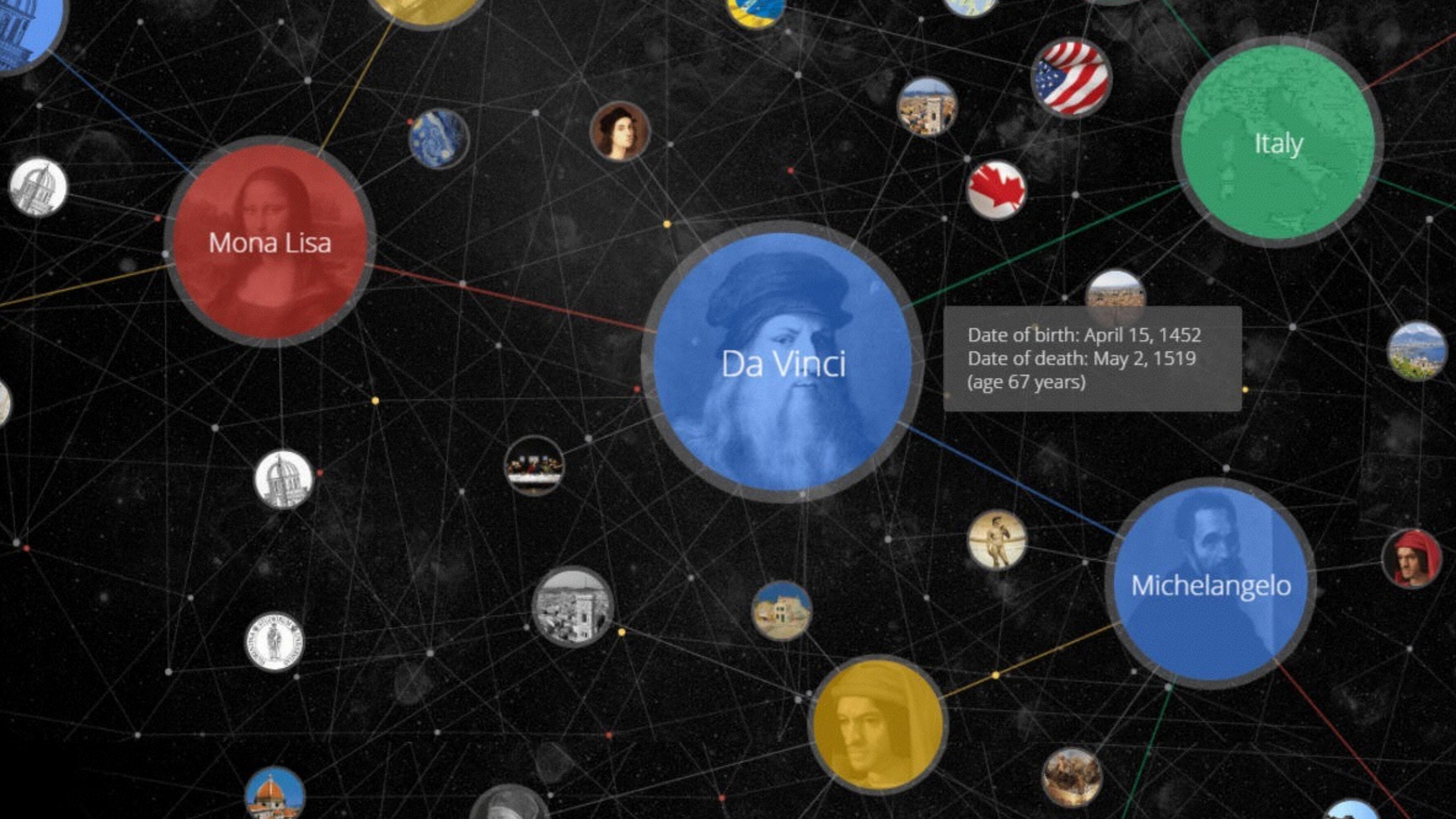
Get the Idea? (TOMORROW'S WEB WILL)



PLUS:

Antibiotics' Dim Future
Rorschach: A Waste of Ink
The Oldest Stars

MAY 2003
www.SciAm.com \$4.95



A network graph on a dark background showing connections between historical figures and their works. Nodes include large circles for 'Mona Lisa' (red), 'Da Vinci' (blue), 'Michelangelo' (blue), and 'Italy' (green). Smaller nodes include portraits, flags, and images of artworks like the Vitruvian Man and the Sistine Chapel ceiling. Lines connect nodes, forming a web of relationships.

Italy

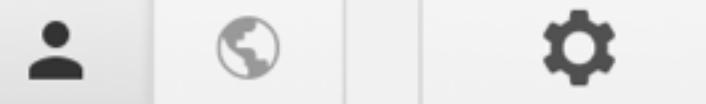
Mona Lisa

Da Vinci

Michelangelo

Date of birth: April 15, 1452
Date of death: May 2, 1519
(age 67 years)

Todas Notícias Vídeos Imagens Shopping Mais ▾ Ferramentas de pesquisa



Stranger Things / Elenco



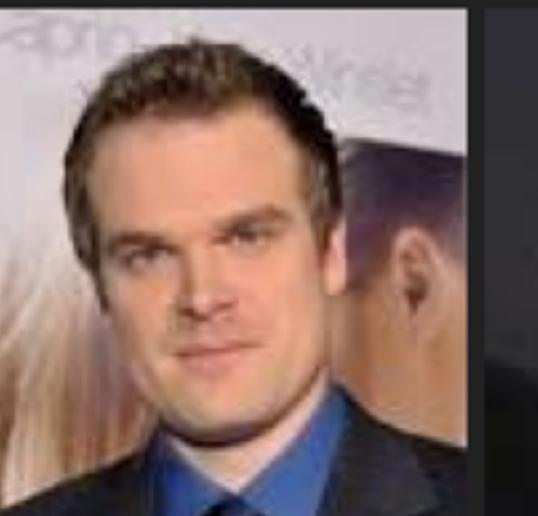
Winona Ryder
Joyce



Natalia Dyer
Nancy



Charlie Heaton
Jonathan



David Harbour
Chief Hopper



Gaten Matarazzo
Dustin



Caleb McLaughlin
Lucas



Noah Schnapp
Will



Finn Wolfhard
Mike



Matthew Modine
Dr. Martin Brenner

Stranger Things - Série 2016 - AdoroCinema

www.adorocinema.com › Séries › Melhores séries › Todas as séries › Séries Drama

Stranger Things, uma série criada por Matt Duffer, Ross Duffer com Winona Ryder, David Harbour: Ambientada em Montauk, Long Island, conta a história de um garoto que desaparece misteriosamente. Enquanto a ... [Elenco Stranger Things](#).

Stranger Things: Elenco da 1ª temporada - AdoroCinema

www.adorocinema.com/series/serie-19156/temporada-26101/elenco/

David Harbour · Millie Brown Personagem: Eleven. Finn Wolfhard Personagem: Mike. Caleb McLaughlin. Personagem: Lucas. Gaten Matarazzo Personagem: ...

Stranger Things

Seriado de ficção científica



Stranger Things – Wikipédia, a enciclopédia livre

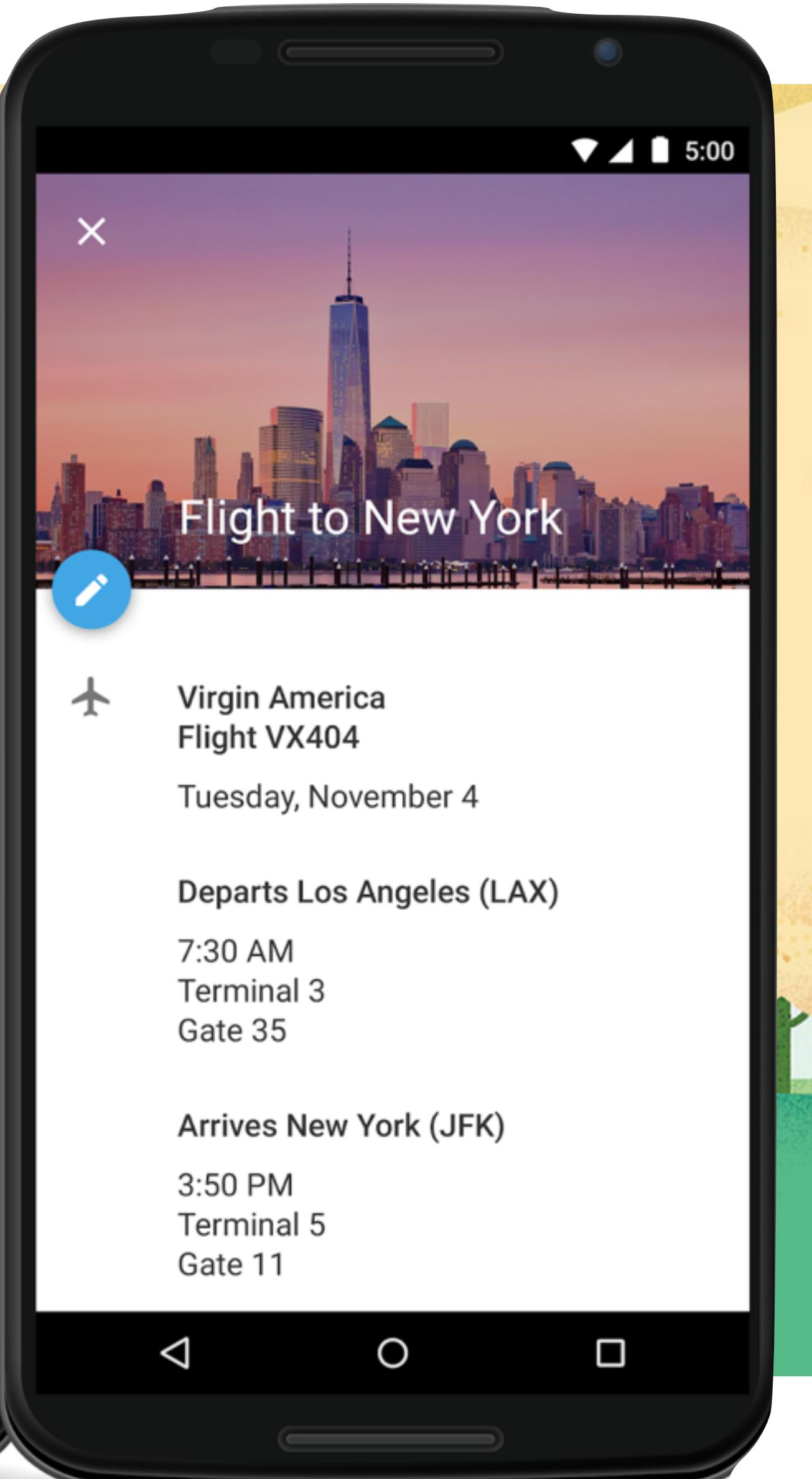
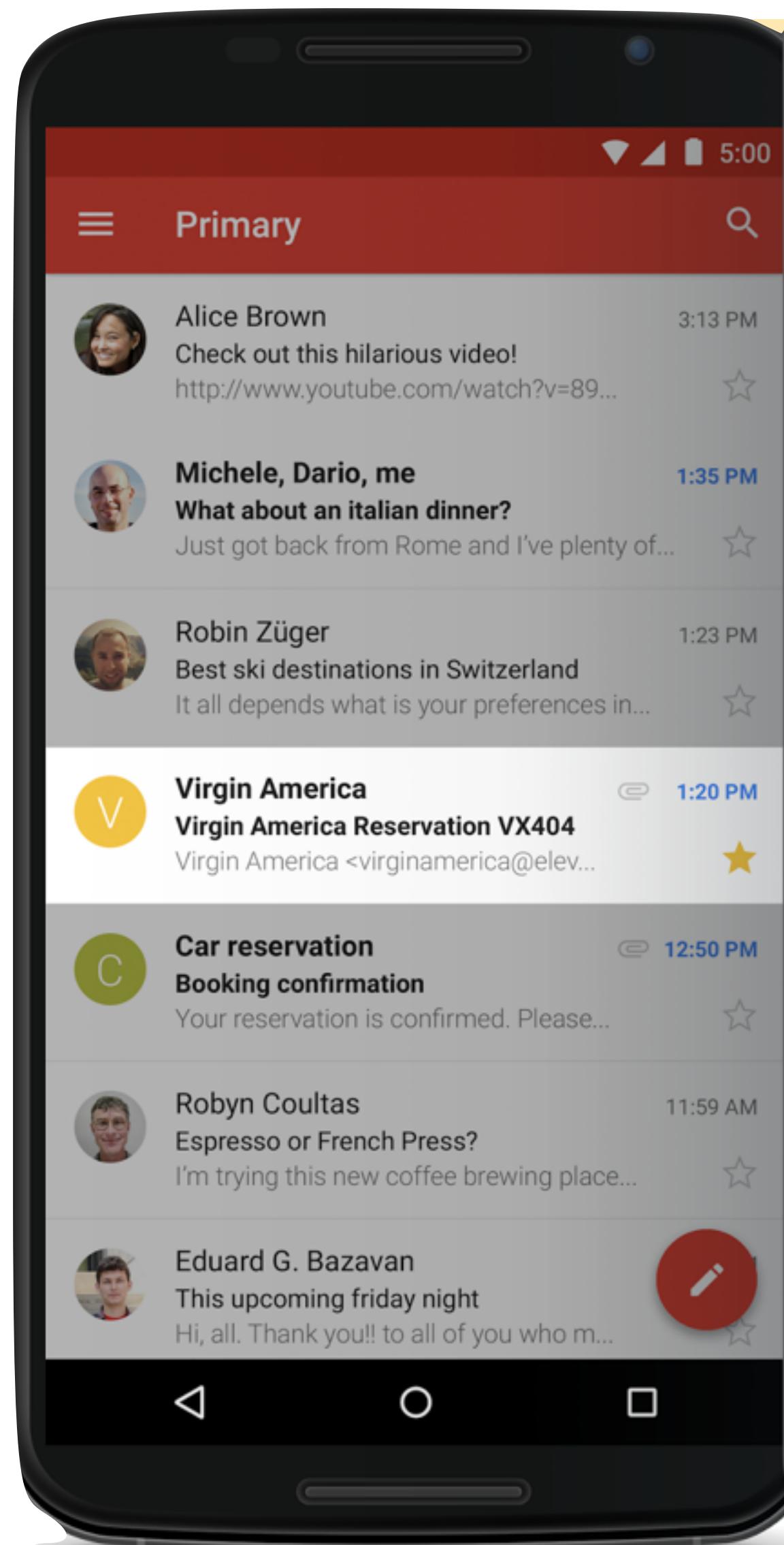
https://pt.wikipedia.org/wiki/Stranger_Things ▾

Ir para [Elenco](#) - Divorciada de seu marido Lonnie, Joyce depende fortemente de Jonathan para cuidá-la. David Harbour como o Delegado Jim Hopper

Stranger Things é uma websérie americana dos gêneros suspense, ficção científica e terror criada pelos irmãos Matt e Ross Duffer e distribuída pela Netflix. [Wikipédia](#)

Emissora original: [Netflix](#)

Número De Episódios: 8



Lava Lite Classic Lava Lamp, Purple/Blue - Walmart.com

[Walmart](#) › [Lava-2118-Lava-Lite-Classic...](#)

★★★★★ Rating: 3.5 - 60 votes - \$13.17 - In stock

Mobile-friendly - Buy Lava Lite Classic Lava Lamp, Purple/Blue at Walmart.com.

IBM

Computer hardware company



[ibm.com](#)

International Business Machines Corporation is an American multinational technology and consulting corporation, with corporate headquarters in Armonk, New York. [Wikipedia](#)

Stock price: IBM (NYSE) \$150.50 +1.35 (+0.91%)
Apr 27, 5:33 PM EDT - Disclaimer

CEO: [Ginni Rometty](#)

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Sales: 1 (888) 746-7426

Headquarters: Armonk, North Castle, NY

Founder: [Charles Ranlett Flint](#)

Founded: June 16, 1911, [New York City, NY](#)

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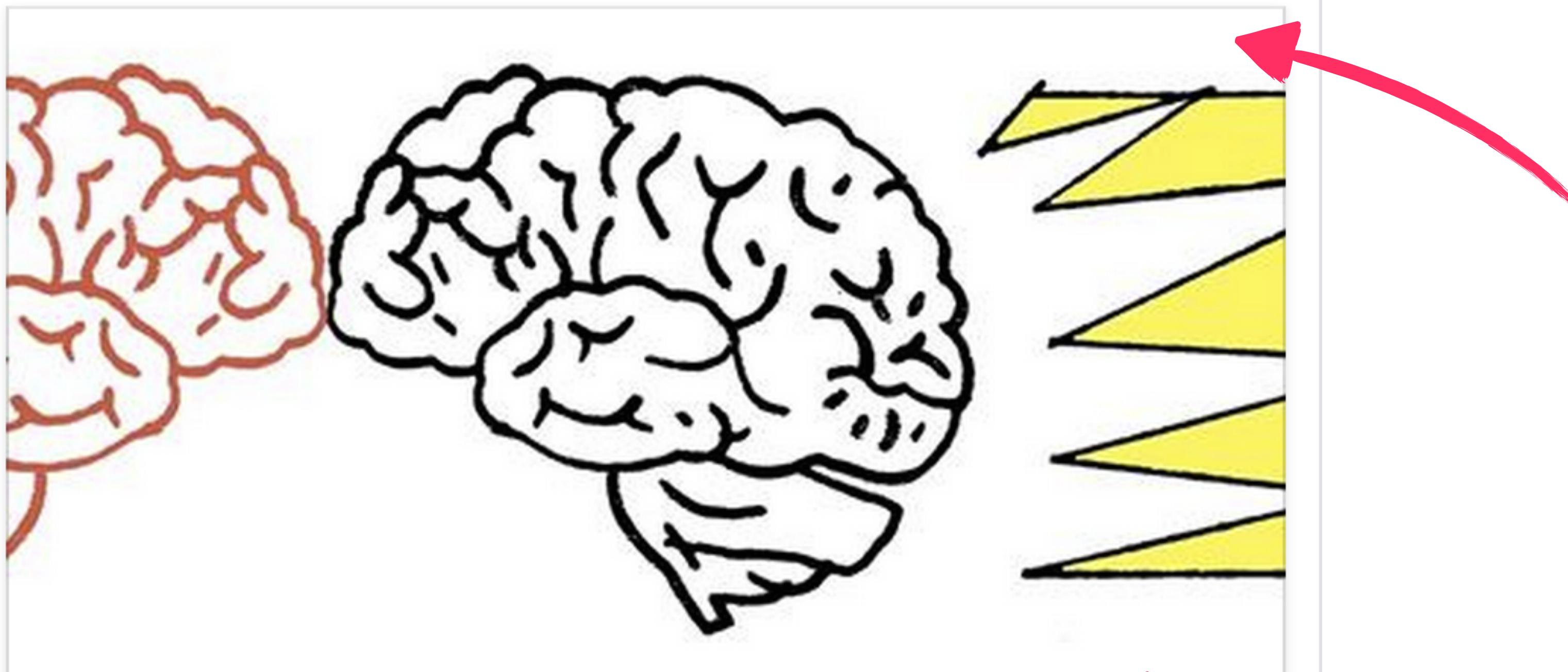
[Feedback](#)



The New York Times

35 mins ·

How an identical brainstorming exercise produced very different results in two distinct cultural contexts.



When Great Minds Don't Think Alike

How much does culture influence creative thinking?

NYTI.MS | BY STEPHEN HEYMAN

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Web Semântica e contexto

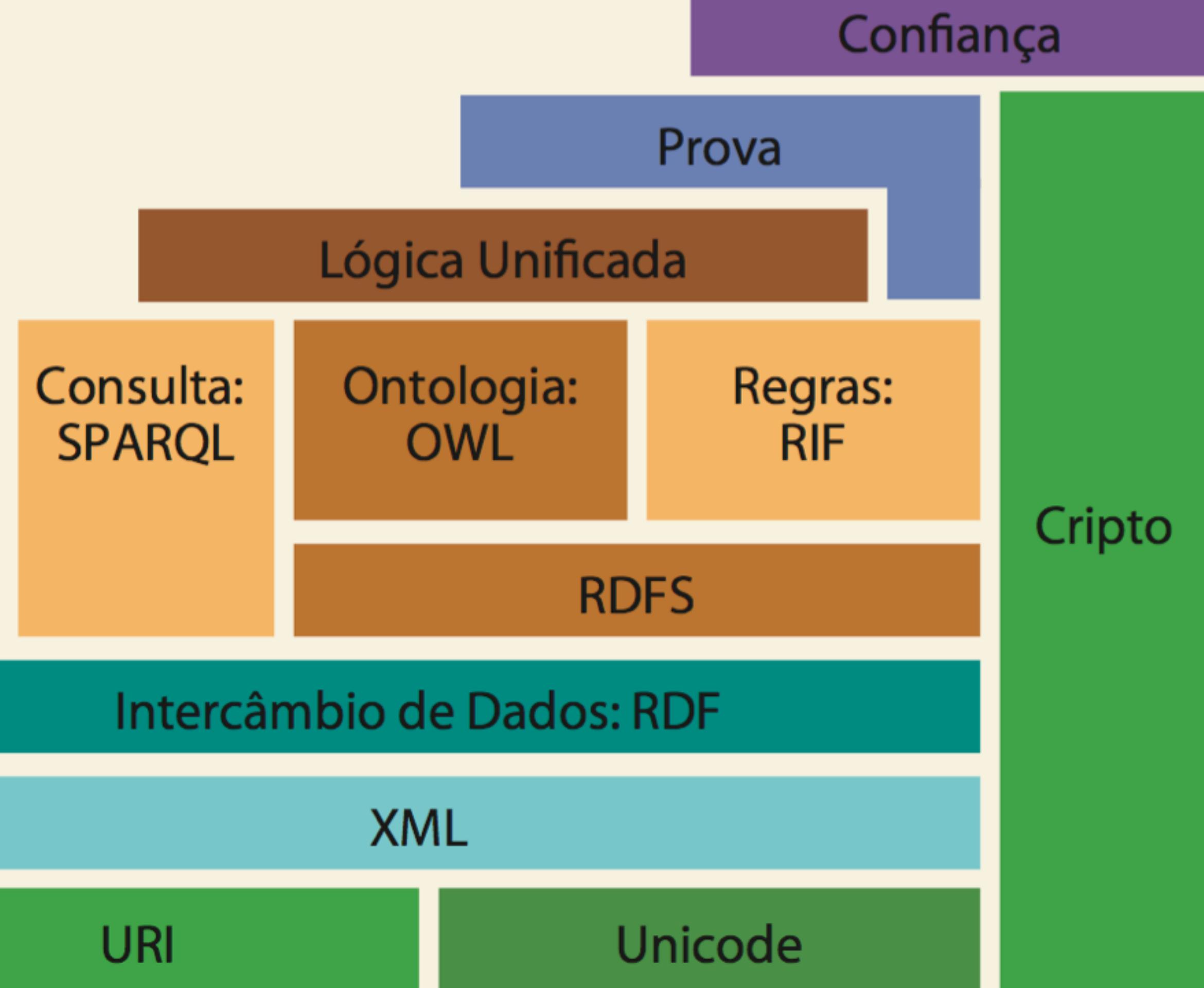
Os fundamentos da Web Semântica

A pilha tecnológica da Web Semântica

Ontologias e Vocabulários

Estado da arte e exemplos

Interface do Usuário & Aplicações



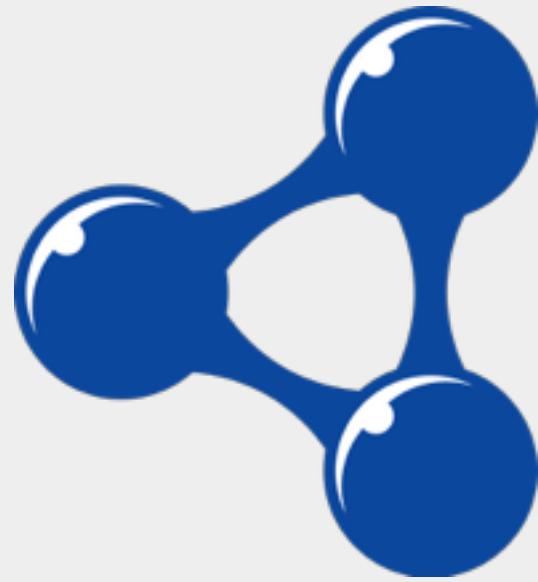
Semantic Web Stack

UNICODE e URI

XML (Linguagens de serialização)

RDF (Resource Description Framework)

RDF



sujeito

Demi Getschko

predicado

conhece

objeto

Vint Cerf



ONTOLOGIAS e VOCABULÁRIOS

Full Hierarchy

Schema.org is defined as two hierarchies: one for textual property values, and one for the things that they describe.

Thing

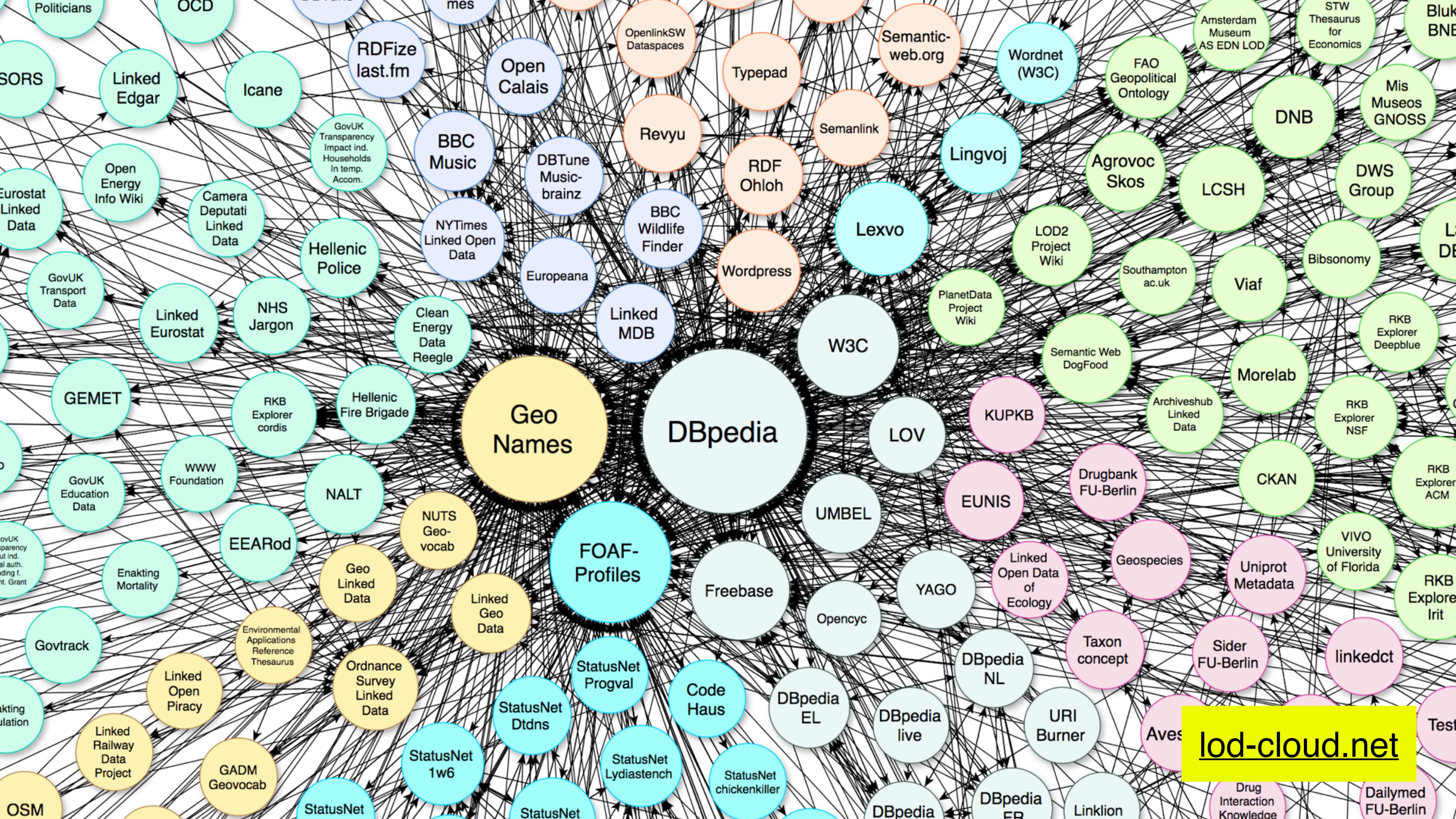
This is the main schema.org hierarchy: a collection of types (or "classes"), each of which has one or more parent types. Although a type may have more than one super-type, here we show each type in one branch of the tree only. There is also a parallel hierarchy for [data types](#).

Select vocabulary view:

- Core vocabulary Core plus all extensions

Core plus extension vocabularies

- [Thing](#)
 - [Action](#)
 - [AchieveAction](#)
 - [LoseAction](#)
 - [TieAction](#)
 - [WinAction](#)
 - [AssessAction](#)



What Happened to the Semantic Web

kidehen.blogspot.com.br/2015/09/what-happened-to-semantic-web.html

search

Classic Flipcard Magazine Mosaic Sidebar Snapshot Timeslide

OpenLink Structured Dat...

Generating 5-Star Linked...

What Happened to the S...

Beyond Bookmarking

DBpedia Pay-As-You-Go ...

Virtuoso Pay-As-You-Go ...

Data & Semantics

Conceptual Data Virtualiz...

What Happened to the Semantic Web?

Situation Analysis

Over the last 15+ years, the same question about the Semantic Web has been posed innumerable times: "*Are we there yet?*"

In this post, I will demonstrate that as expected [1][2], its arrival was without fanfare, but we are inarguably there.

Semantic Web Illustration

Semantically Enhanced Linked Data Network (e.g., Semantic Web of Big Linked Open Data)

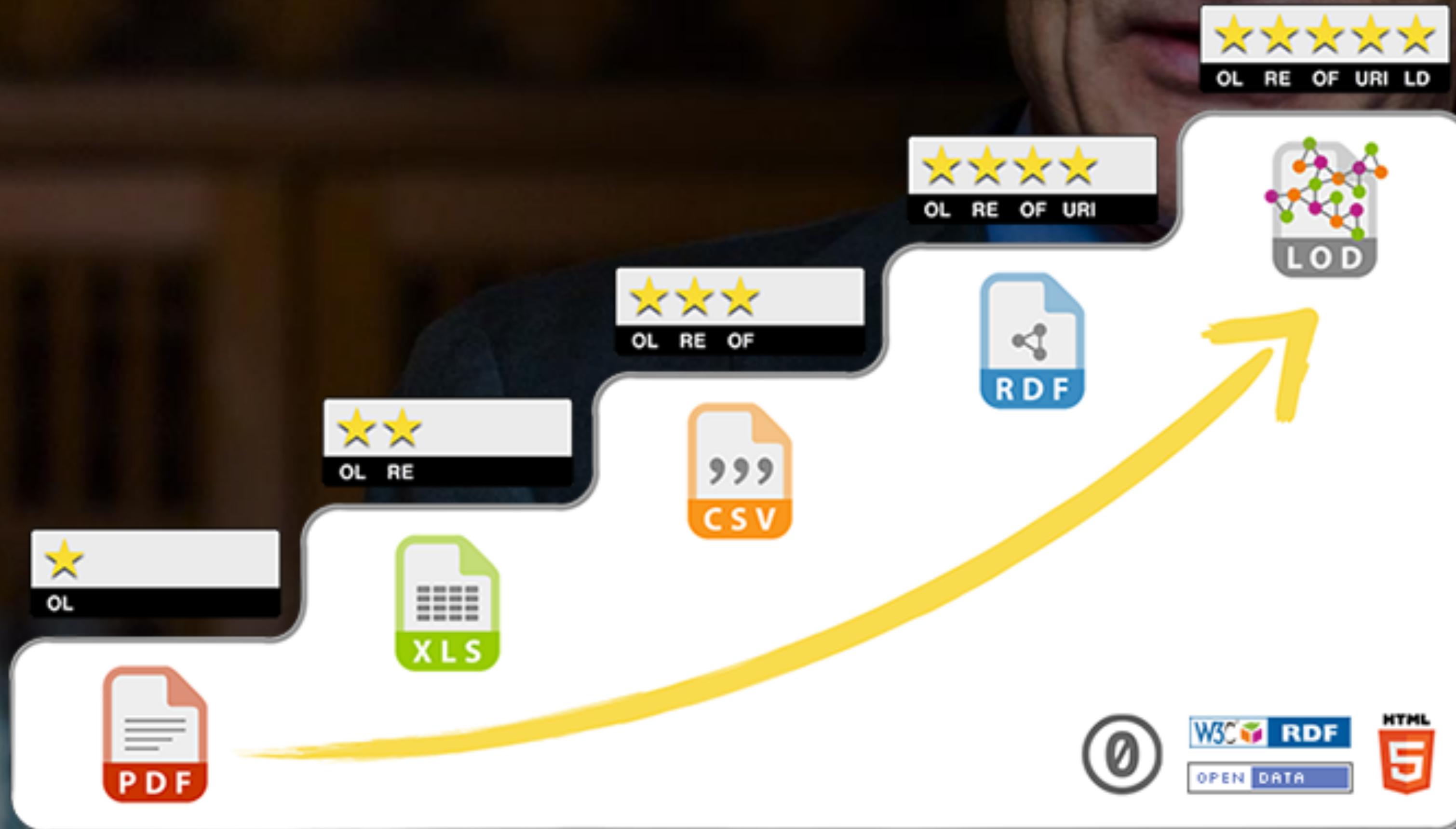
Dynamic Views theme. Powered by Blogger.

<http://kidehen.blogspot.com.br/2015/09/what-happened-to-semantic-web.html>

Dados Abertos

5 ★ OPEN DATA

Tim Berners-Lee, the inventor of the Web and Linked Data initiator, suggested a 5-star deployment scheme for Open Data. Here, we give examples for each step of the stars and explain costs and benefits that come along with it.



 Citymapper - The Ultimate Tra

← → ⌂  Secure | https://citymapper.com/sao-paulo?set_region=br-saopaulo

Jobs Contact   

 Sao Paulo ▾

GET ME SOMEWHERE

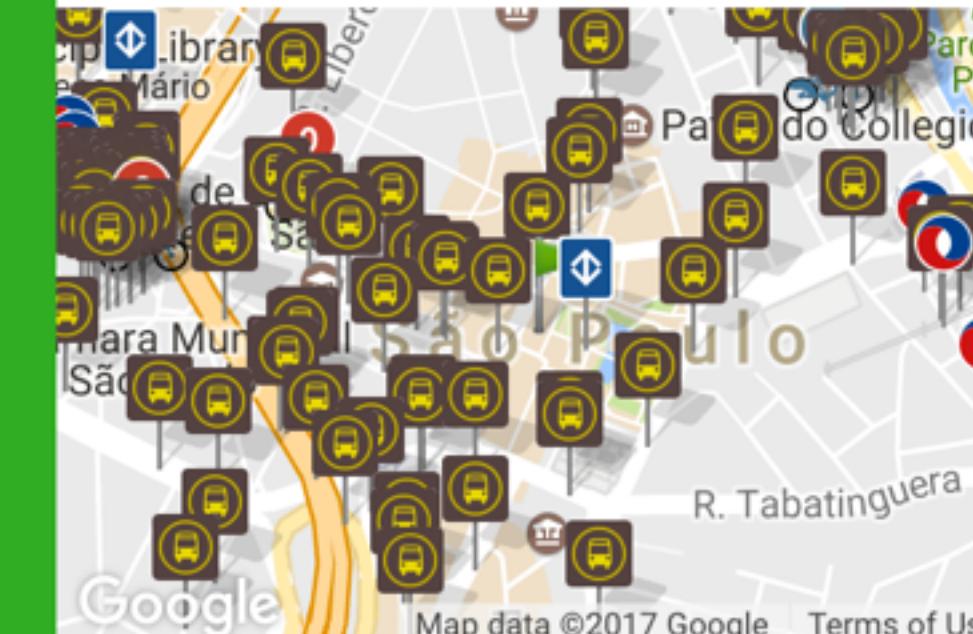
Start
End
Now > 

Log in and we'll save your stuff >

MAPS

Service Map 

NEARBY

Near Praça da Sé 
Map data ©2017 Google Terms of Use

 Bus  Metrô  CPTM  Bikes

Nearest Stops

Parada 2 - Benjamim Constant >

LINES

Find a bus or line 

Metrô, CPTM

- 4 Butanta - Luz  **Operação Encerrada**
- 1 Tucuruvi - Jabaquara  **Operação Encerrada**
- 5 Capao Redondo - Adolfo Pinheiro  **Operação Encerrada**
- 15 Vila Prudente - Oratório  **Operação Encerrada**
- 2 Vila Madalena - Vila Prudente  **Operação Encerrada**
- 3 Corinthians-Itaquera - Palmeiras-Barra Funda  **Operação Encerrada**

Bem vindo - Portal Brasileiro

dados.gov.br

BRASIL Serviços Participe Acesso à informação Legislação Canais

Ir para o conteúdo 1 Ir para o menu 2 Ir para a busca 3 Ir para o rodapé 4

Pesquisar conjuntos de dados...

 dados.gov.br

PORTAL BRASILEIRO DE DADOS ABERTOS

Dados | Aplicativos | Perguntas frequentes | Contato | Sobre o portal

Pesquisa ... PESQUISAR

em 2894 conjuntos de dados com recursos (o que é isto?)

Dados em destaque

Massas d'Água (Espelhos d'Água)
O dado comprehende todas as massas d'água do país, naturais e artificiais, com uma área superficial a partir de 20...

Regiões Hidrográficas
Região Hidrográfica é o espaço territorial brasileiro compreendido por uma bacia, grupo de bacias ou sub-bacias...

Publicações mais recentes

Conjunto de dados	Quando
Empreendimentos Rodoviários monitorados pela SNTTA	02/05/2017
Resumo da Execução Orçamentária e Financeira	02/05/2017
Infraestrutura Federal de Transportes - Malha Ferroviária	02/05/2017
Série Histórica Orçamentária - Por Modal	02/05/2017
Incentivo Fiscal aos Investimentos de Infraestrutura-REIDI	02/05/2017

Establishing secure connection...

Dados por etiqueta

Bem vindo - Portal de Dados / X

dados.prefeitura.sp.gov.br

DADOS ABERTOS

PREFEITURA DE SÃO PAULO

Conjuntos de dados Órgãos Temas Sobre

Pesquisar

QUE DADOS VOCÊ PROCURA SOBRE A CIDADE DE SÃO PAULO?

ex.: mapa da cidade

SOBRE O PORTAL

O Portal de Dados Abertos da Prefeitura de São Paulo reúne conjuntos de dados de todas as secretarias, subprefeituras e empresas públicas municipais. Com os recursos deste Portal, é possível construir aplicativos, visualizações de dados e obter informações essenciais sobre as políticas públicas e a administração da cidade. Saiba mais.

DA

SP CIDADE LINDA

SP CIDADE LINDA

2018 FIFA WORLD CUP RUSSIA®
QUALIFIERS

SP CIDADE LINDA



A soccer match is taking place on a green grass field. In the foreground, a player in a yellow jersey with the number 5 is running towards the right. Another player in a blue and white striped jersey is running towards the left. In the background, a player in a yellow jersey is walking away from the camera. The sky is clear and blue.

**Quanto custa 1 minuto de propaganda
na placa em jogo de futebol?**

Refine^{OPEN} 

RDF, Grafos, Linguagens e SPARQL

Triplas RDF e Grafos

Linguagens de serialização

Triple stores (Banco de Dados)

Queries SPARQL

RDF TRIPLE STORE

SPARQL

```
PREFIX dbo: <http://dbpedia.org/ontology/>
```

```
PREFIX dbp: <http://dbpedia.org/property/>
```

```
PREFIX dbr: <http://dbpedia.org/resource/>
```

```
SELECT ?obra
```

```
WHERE {
```

```
    ?obra dbp:artist dbr:Vincent_van_Gogh
```

```
}
```

DBpedia

wiki.dbpedia.org

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CLICK
GET INVOLVED
HERE

Towards a Public Data Infrastructure for a Large, Multilingual, Semantic Knowledge Graph

f g+ t v r

FEATURED PROJECTS

RelFinder 

PROJECT

RelFinder

Are you interested in how things are related with each other? The flash-based [RelFinder](#) helps to get an overview: It extracts and visualizes relationships between given objects in RDF data and

Descrição de dados e RDFa

Ontologias e vocabulários

Especificação RDFa

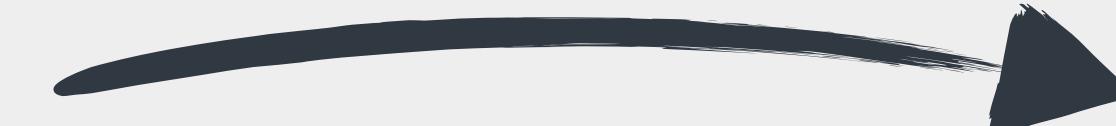
Aplicação prática de RDFa

machine-readable vs human-readable

RDF em atributos no HTML

RDFa (Lite)

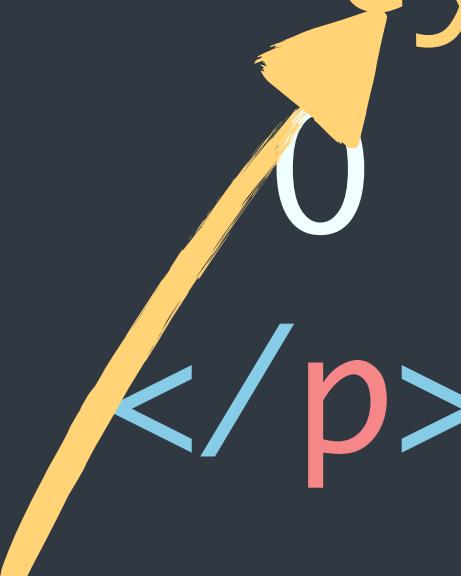
**4 propriedades
para começarmos**

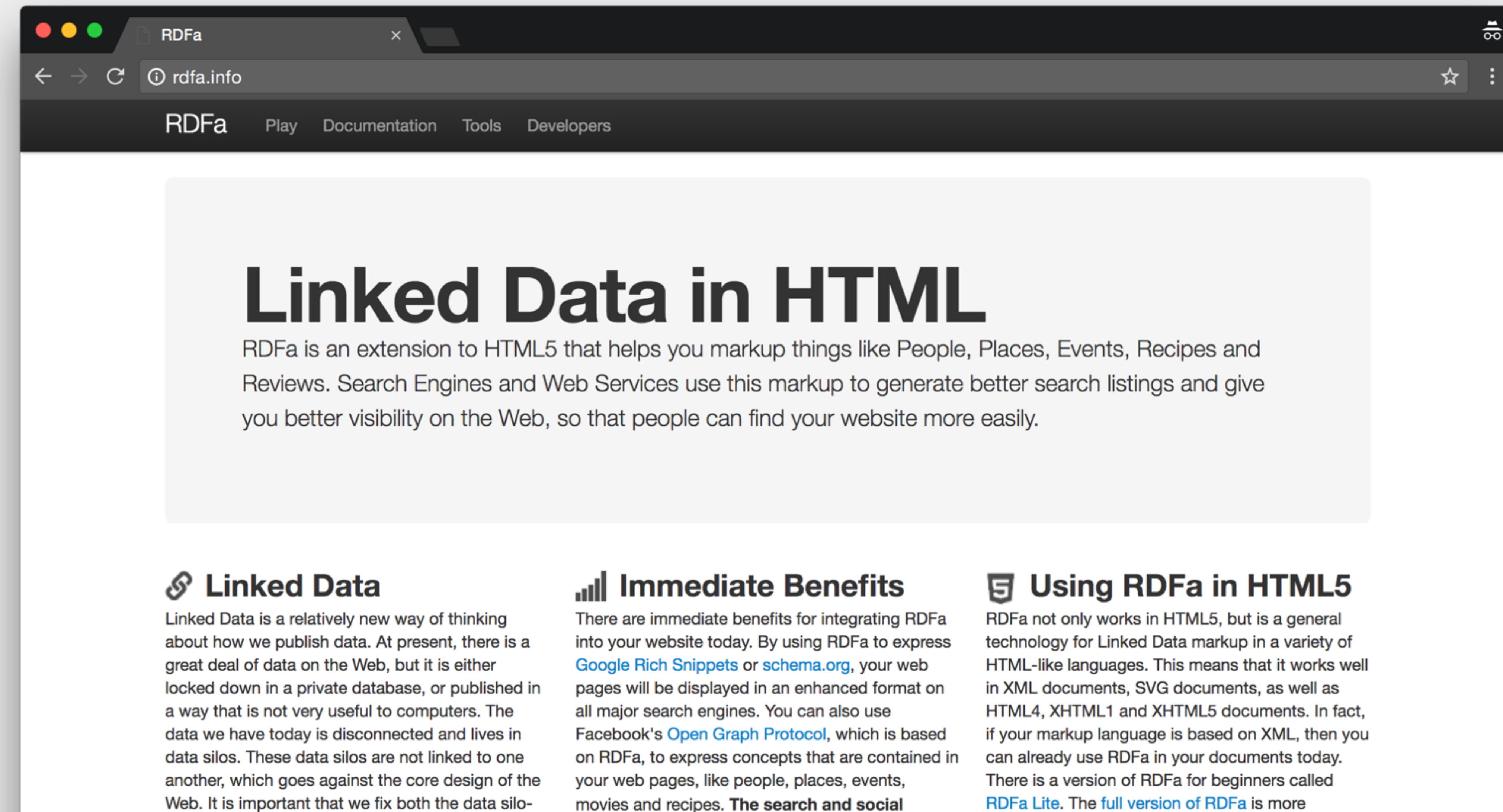


vocab
property
typeof
content

@typeof

```
<p vocab="http://schema.org/"  
    typeof="Event">  
    FrontInBH ocorre no dia 06/08/2016!  
</p>
```



A screenshot of a web browser window showing the rdaf.info website. The title bar says "RDFa" and the address bar shows "rdaf.info". The page has a dark header with "RDFa" and links to "Play", "Documentation", "Tools", and "Developers". The main content area features a large heading "Linked Data in HTML". Below it is a text block explaining what RDFa is and its benefits. There are three columns of text: "Linked Data", "Immediate Benefits", and "Using RDFa in HTML5".

Linked Data in HTML

RDFa is an extension to HTML5 that helps you markup things like People, Places, Events, Recipes and Reviews. Search Engines and Web Services use this markup to generate better search listings and give you better visibility on the Web, so that people can find your website more easily.

🔗 Linked Data

Linked Data is a relatively new way of thinking about how we publish data. At present, there is a great deal of data on the Web, but it is either locked down in a private database, or published in a way that is not very useful to computers. The data we have today is disconnected and lives in data silos. These data silos are not linked to one another, which goes against the core design of the Web. It is important that we fix both the data silo-

📊 Immediate Benefits

There are immediate benefits for integrating RDFa into your website today. By using RDFa to express [Google Rich Snippets](#) or [schema.org](#), your web pages will be displayed in an enhanced format on all major search engines. You can also use Facebook's [Open Graph Protocol](#), which is based on RDFa, to express concepts that are contained in your web pages, like people, places, events, movies and recipes. [The search and social](#)

🌐 Using RDFa in HTML5

RDFa not only works in HTML5, but is a general technology for Linked Data markup in a variety of HTML-like languages. This means that it works well in XML documents, SVG documents, as well as HTML4, XHTML1 and XHTML5 documents. In fact, if your markup language is based on XML, then you can already use RDFa in your documents today. There is a version of RDFa for beginners called [RDFa Lite](#). The full version of RDFa is more

<http://rdfa.info>

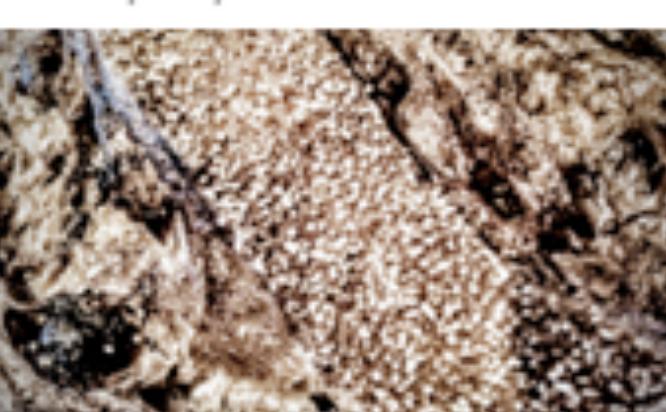
JSON para Linked Data

Especificação JSON-LD
Aplicando JSON-LD e RDFa

Google AMP & NewsArticle

Top stories

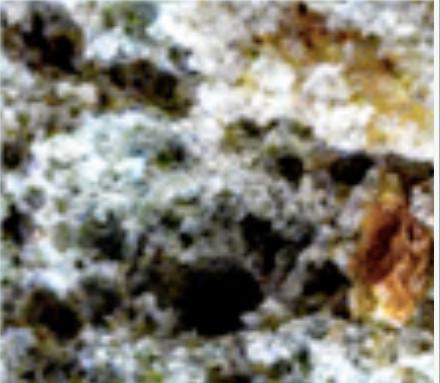
Example Space Science



New photos of the red planet yield surprising results

● AMP - 1 hour ago

Example News



Martian desert car food for explorers

● AMP - 8 hours ago

In the news

[Christina Aguilera Belts New York Medley at NBA All-Star Game: Video](#)



Us Magazine - 1 day ago

[David Letterman's intern asks NBA All-Stars the tough questions](#)

SI.com - 1 day ago



74th over: Australia 2 (Voges 112, Nevill 0) Phwoar, Dougie Brace is giving Peter Nevill a sorts of bother in the stages of his innings moving the ball in off long, gaping crack a f feet outside off stump

75th over: Australia 277-4 (Voges 112, Nevill 0) Voges is ...

13 mins ago - [View more](#)

19 mins ago - [View more](#)

JSON-LD


```
{  
  "@context": "http://schema.org",  
  "@id": "https://www.wikidata.org/wiki/Q76",  
  "@type": "Person",  
  "name": "Barack Obama",  
  "givenName": "Barack",  
  "familyName": "Obama",  
  "jobTitle": "44th President of the United States"  
}
```

```
<script type="application/ld+json">  
    // conteúdo JSON-LD aqui dentro  
</script>
```

<https://developers.google.com/search/docs/guides/>

Uma pequena atividade...



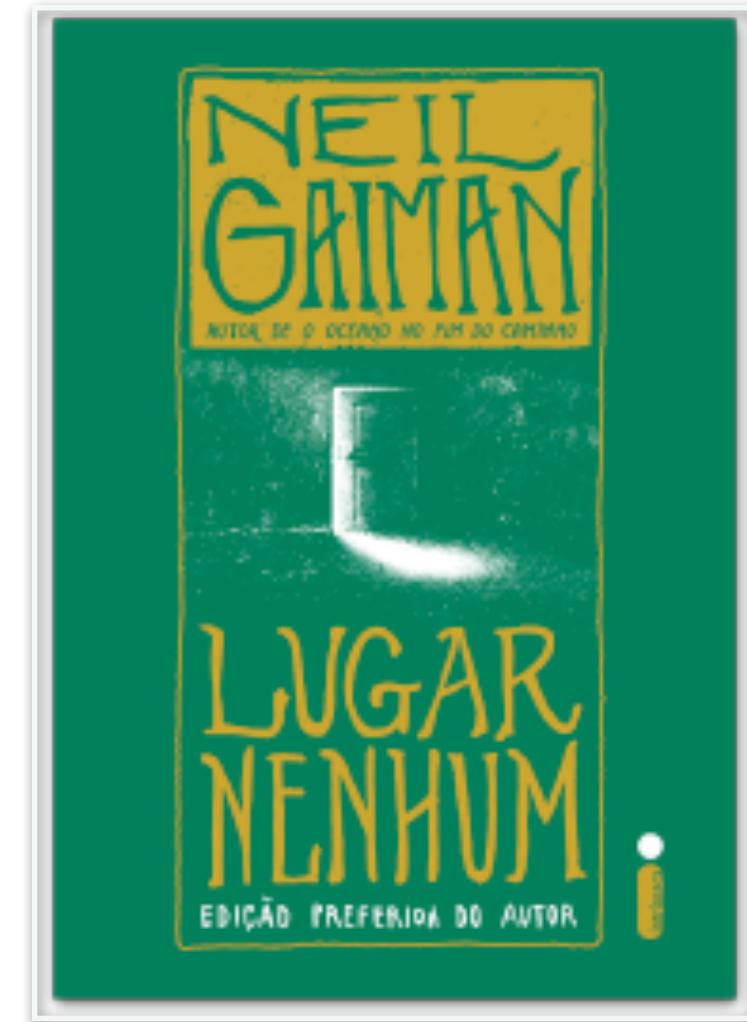
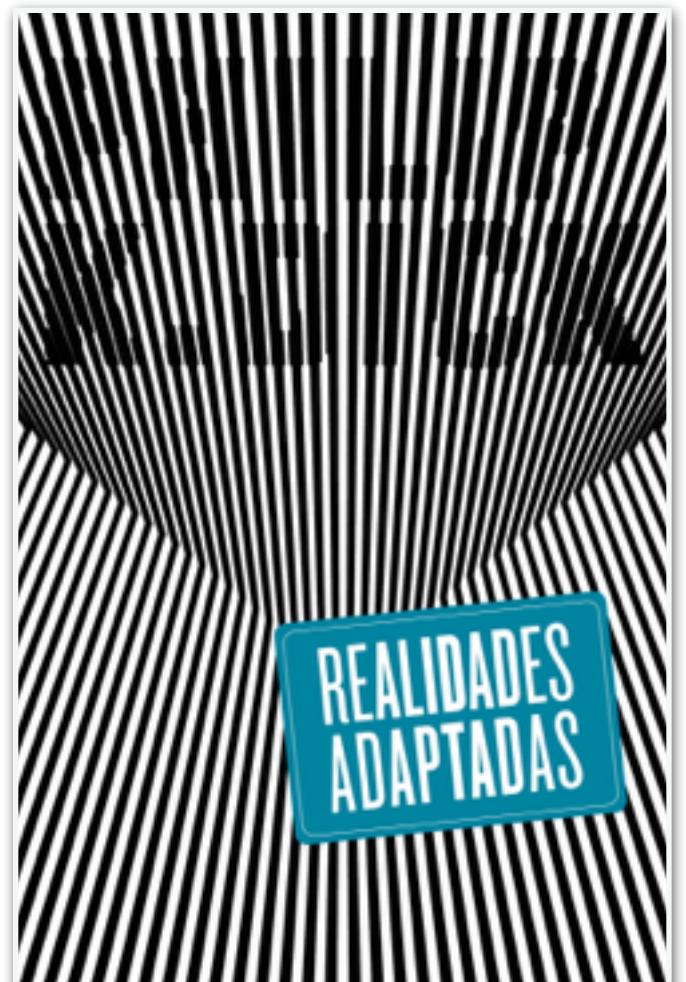
Newton Calegari

newton@nic.br

www.newtoncalegari.com.br

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Filmes e series:

Produtos:



Desenvolvimento de aplicações semânticas

Frameworks com suporte para RDF

Triple stores

Frameworks RDF e *Triple stores*

EasyRdf - RDF Library for PHP X

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**, **raptor**
- 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™

» Package Index > rdflib > 4.2.2

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>

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

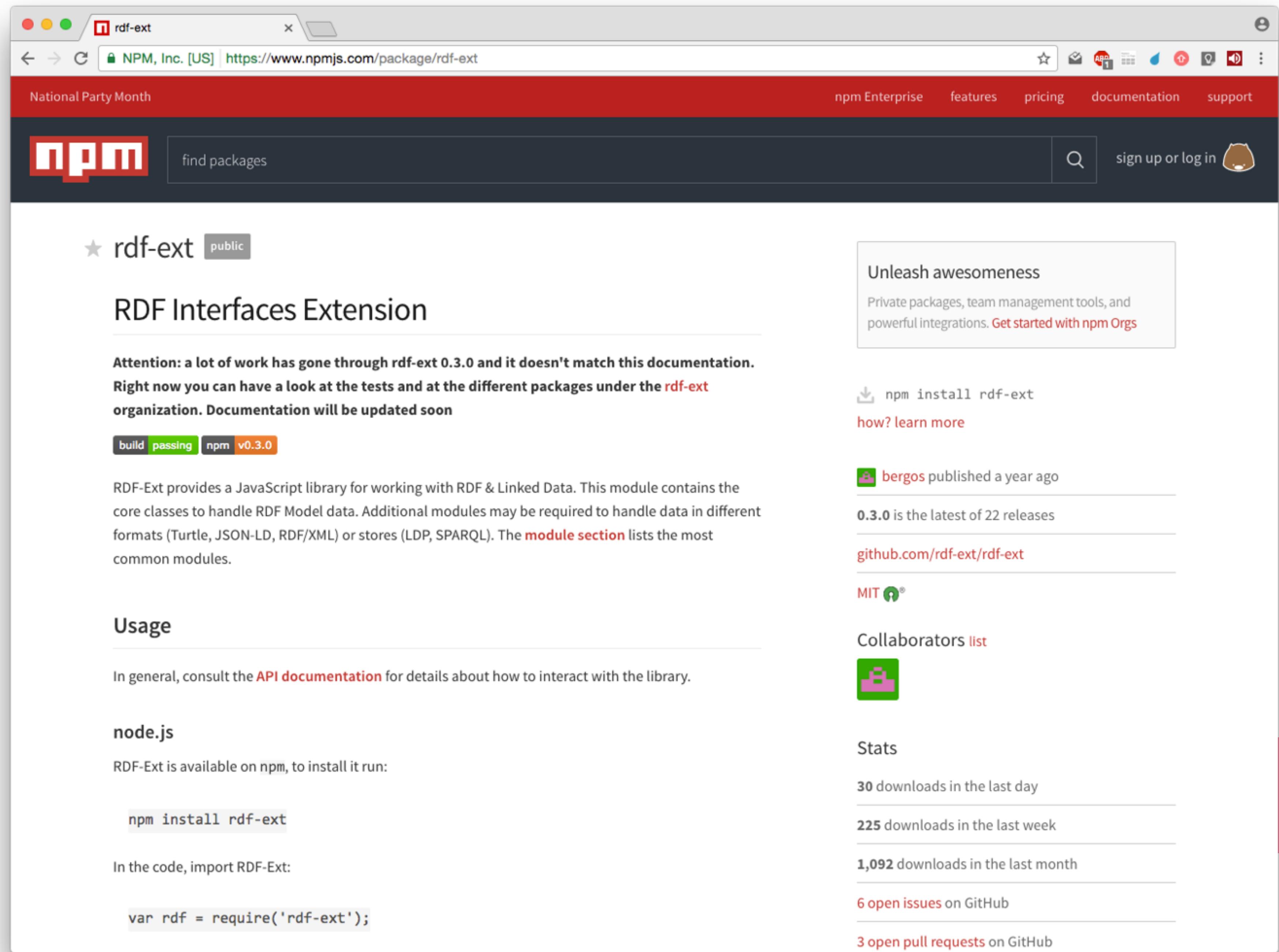
Not Logged In

[Login](#)
[Register](#)
[Lost Login?](#)
[Use OpenID](#) 
[Login with Google](#) 

Status

Nothing to report

Python

A screenshot of a web browser displaying the npmjs.com package page for "rdf-ext". The page has a red header with the npm logo and a search bar. The main content area shows the package name "rdf-ext" with a star icon, a "public" badge, and the title "RDF Interfaces Extension". A note states: "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". Below this are build status badges for "build passing" and "npm v0.3.0". A text block describes RDF-Ext as a JavaScript library for working with RDF & Linked Data. To the right, there's a sidebar with links like "Unleash awesomeness", "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", and "MIT". A "Collaborators list" section shows a profile picture for "bergos". A "Stats" section provides download counts: "30 downloads in the last day", "225 downloads in the last week", "1,092 downloads in the last month", "6 open issues on GitHub", and "3 open pull requests on GitHub". A large red banner at the bottom right contains the letters "JS".

National Party Month

npm Enterprise features pricing documentation support

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 X

rdf4j.org

rdf4j

Search

Home About Download Documentation Support

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

f in t g+ e

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.



Links

- Eclipse technology.rdf4j project
- Find us on GitHub
- Chat to us on IRC

Java

Graph Database Free Download

https://ontotext.com/products/graphdb/

Ontotext Products Solutions Knowledge Hub Company Contact Blog

Ontotext > Products > Graph DB™

Graph Database Free Download - Ontotext Graph DB™

Build 360° Data View!

Establish Master Data as Linked Data.

Leverage Legacy Data as Knowledge Graph.



GraphDB 8

Serve Enterprise Linked Data

First Name *

Last Name *

Email *

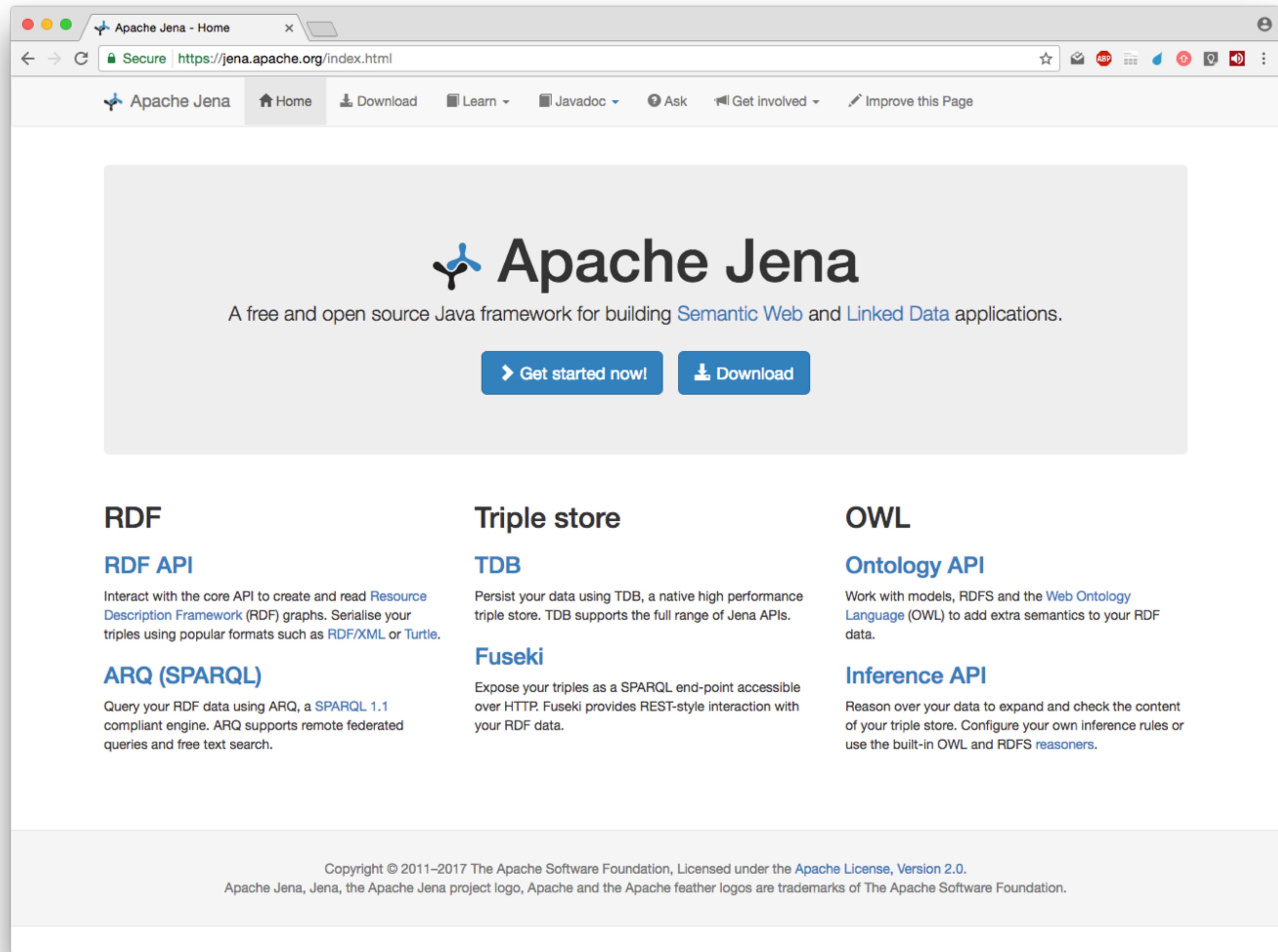
Company *

Job Title *

Country *

Download GraphDB FREE

RDF store



The screenshot shows the Apache Jena Home page in a web browser. The title bar reads "Apache Jena - Home". The URL in the address bar is "https://jena.apache.org/index.html". The page features a large central banner with the Apache Jena logo and the text "Apache Jena" and "A free and open source Java framework for building Semantic Web and Linked Data applications." Below the banner are two blue buttons: "Get started now!" and "Download". The main content area is divided into three columns: "RDF" (with sections for "RDF API" and "ARQ (SPARQL)"), "Triple store" (with sections for "TDB" and "Fuseki"), and "OWL" (with sections for "Ontology API" and "Inference API"). At the bottom, there is a copyright notice: "Copyright © 2011–2017 The Apache Software Foundation, Licensed under the Apache License, Version 2.0." and "Apache Jena, Jena, the Apache Jena project logo, Apache and the Apache feather logos are trademarks of The Apache Software Foundation."

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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Apache Jena, Jena, the Apache Jena project logo, Apache and the Apache feather logos are trademarks of The Apache Software Foundation.

RDF
store

Processamento de Linguagem Natural

Conceitos

Casos de uso

Frameworks e aplicações

Processamento de Linguagem Natural

Natural Language Processing

som

fonologia

estrutura

significado

som

estrutura

sintaxe

significado

som

estrutura

significado

semântica

Casos de uso de PLN

natureza dos dados

estruturados

semi-estruturados

não-estruturados

Ferramentas PLN

Apache OpenNLP

Secure | https://opennlp.apache.org

Home Download General Documentation Development

AS Fork me on GitHub



OPEN NLP™

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 *dependency parsing*.

<https://opennlp.apache.org/#>

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

Princeton University New post: What is Explainable AI? <https://tinker.com/>

OpenNLP

Free NLP Techniques, Exercises x Introduction to Natural Language Processing x Stanford CoreNLP – Core natural language software x Mallet homepage x nlp.stanford.edu x

Secure https://stanfordnlp.github.io/CoreNLP/ ⋮

Stanford CoreNLP Github repo Quick links ▾

CoreNLP

version 3.7.0

- Overview
- Usage
- Annotators
- Additional tools
- Resources

Stanford CoreNLP – Core natural language software

Table of Contents

- About
- Download
- Human languages supported
- Programming languages and operating systems
- License
- Citing Stanford CoreNLP in papers

About

Stanford CoreNLP provides a set of natural language analysis tools. It can give the base forms of words, their parts of speech, whether they are names of companies, people, etc., normalize dates, times, and numeric quantities, mark up the structure of sentences in terms of phrases and word dependencies, indicate which noun phrases refer to the same entities, indicate sentiment, extract particular or open-class relations between entity mentions, get quotes people said, etc.

Choose Stanford CoreNLP if you need:

- An integrated toolkit with a good range of grammatical analysis tools
- Fast, reliable analysis of arbitrary texts
- The overall highest quality text analytics
- Support for a number of major (human) languages

Stanford CoreNLP

Mallet

MALLET homepage

mallet.cs.umass.edu/index.php

MALLET

MAchine Learning for LanguagE Toolkit

UMASS AMHERST

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[Tutorial slides / video](#)

[Download](#)

[API](#)

[Quick Start](#)

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[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 routines for transforming text documents into numerical representations.

Natural Language Toolkit — 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

NLTK

Python NLTK

Processamento de Linguagem Natural

Python NLTK
Exercícios

Tokenization

Part of Speech (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

WordNet

Machado de Assis

Google Natural Language API

Tarefas NLP

Análise de sentimento

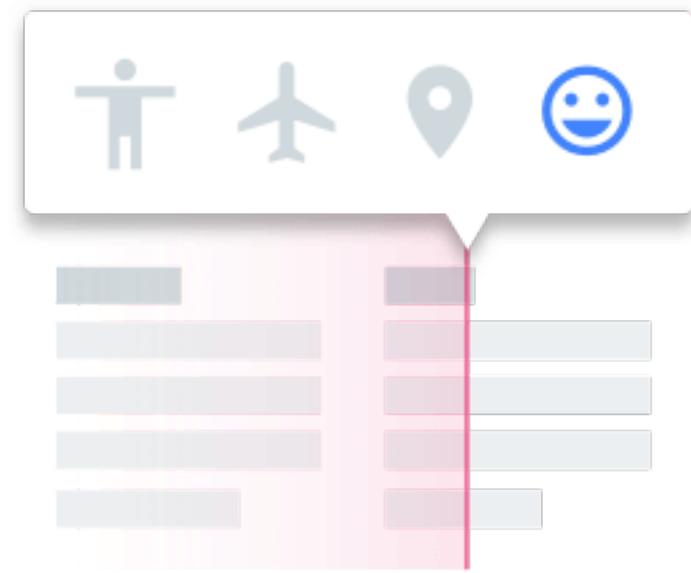
Reconhecimento de entidades em texto

Exercícios



Google Cloud Platform

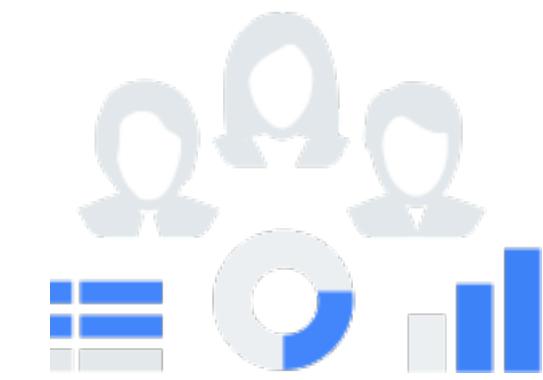
Natural Language API



Powerful Text
Analysis



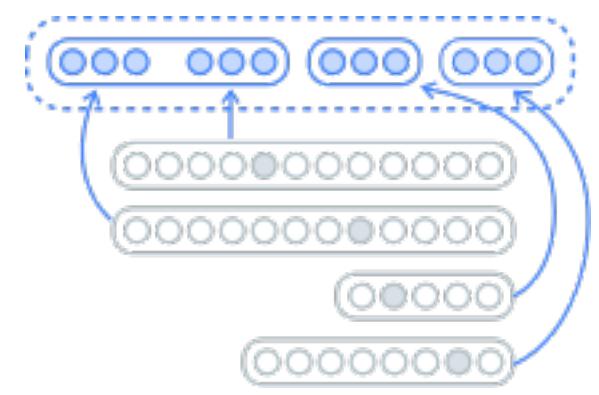
Multi-lingual
support



Insights from
customers



Relationships
Graphs



Deep Learning
models

Análise sintática

Extração de “tokens” e sentenças, identificação de partes do discurso (PoS) e geração de árvore de dependência para cada sentença.

Reconhecimento de entidades

Identificação de entidades em texto rotulando por tipos, como
pessoa, organização, localização, evento, produto.

Análise de sentimento

Entendimento do sentimento geral presente em um bloco de texto.

IBM Watson



IBM **Bluemix**™

Catalog - IBM Bluemix

Secure | https://console.bluemix.net/catalog/?category=watson&taxonomyNavigation=apps&env_id=ibm:yp:us-south

29 Trial Days Remaining | Newton Calegari's Account | US South : newtoncalegari : websemantica-pucsp

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OpenWhisk

Mobile

Services

Data & Analytics

Watson

Internet of Things

APIs

Network

Storage

Security

DevOps

Application Services

Integrate

Search Filter

Build cognitive apps that help enhance, scale, and accelerate human expertise.

Conversation
Add a natural language interface to your application to automate

Lite IBM

Discovery
Add a cognitive search and content analytics engine to applications.

IBM

Document Conversion
Converts a HTML, PDF, or Microsoft Word™ document into a normalized

IBM

Language Translator
Translate text from one language to another for specific domains.

Lite IBM

Natural Language Classifier
Natural Language Classifier performs natural language

IBM

Natural Language Understanding
Analyze text to extract meta-data from content such as concepts,

Lite IBM

Personality Insights
The Watson Personality Insights derives insights from transactions

Lite IBM

Retrieve and Rank
Add machine learning enhanced search capabilities to your

IBM

Speech to Text
Low-latency, streaming transcription

IBM

Text to Speech
Synthesizes natural-sounding speech from text.

IBM

Tone Analyzer
Tone Analyzer uses linguistic analysis to detect three types of

Lite IBM

Visual Recognition
Find meaning in visual content! Analyze images for scenes, objects

IBM

Natural Language Understanding

Secure | https://console.bluemix.net/catalog/services/natural-language-understanding?env_id=ibm:yp:us-south&taxonomyNavigation=true

29 Trial Days Remaining | Newton Calegari's Account | US South : newtoncalegari : websemanticapucsp

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IBM Bluemix Catalog

View all

Natural Language Understanding

Analyze text to extract meta-data from content such as concepts, entities, keywords, categories, sentiment, emotion, relations, semantic roles, using natural language understanding. With custom annotation models developed using Watson Knowledge Studio, identify industry/domain specific entities and relations in unstructured text.

Service name: Natural Language Understanding-wf

Credential name: Credentials-1

Features

Connect to: Leave unbound

View Docs

AUTHOR IBM
PUBLISHED 07/05/2017
TYPE Service
LOCATION US South

Pricing Plans

Monthly prices shown are for country or region: Brazil

PLAN	FEATURES	PRICING
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Estimate Monthly Cost [Cost Calculator](#)

Create

Amazon Web Services

Amazon Lex – Build Conversational Interfaces

Secure https://aws.amazon.com/lex/

Menu Amazon web services Products Solutions Pricing Software More English My Account Sign In to the Console

Amazon Lex

Conversational interfaces for your applications
Powered by the same deep learning technologies as Alexa

GET STARTED WITH AMAZON LEX

Product Details Pricing Getting Started FAQs Developers Customers

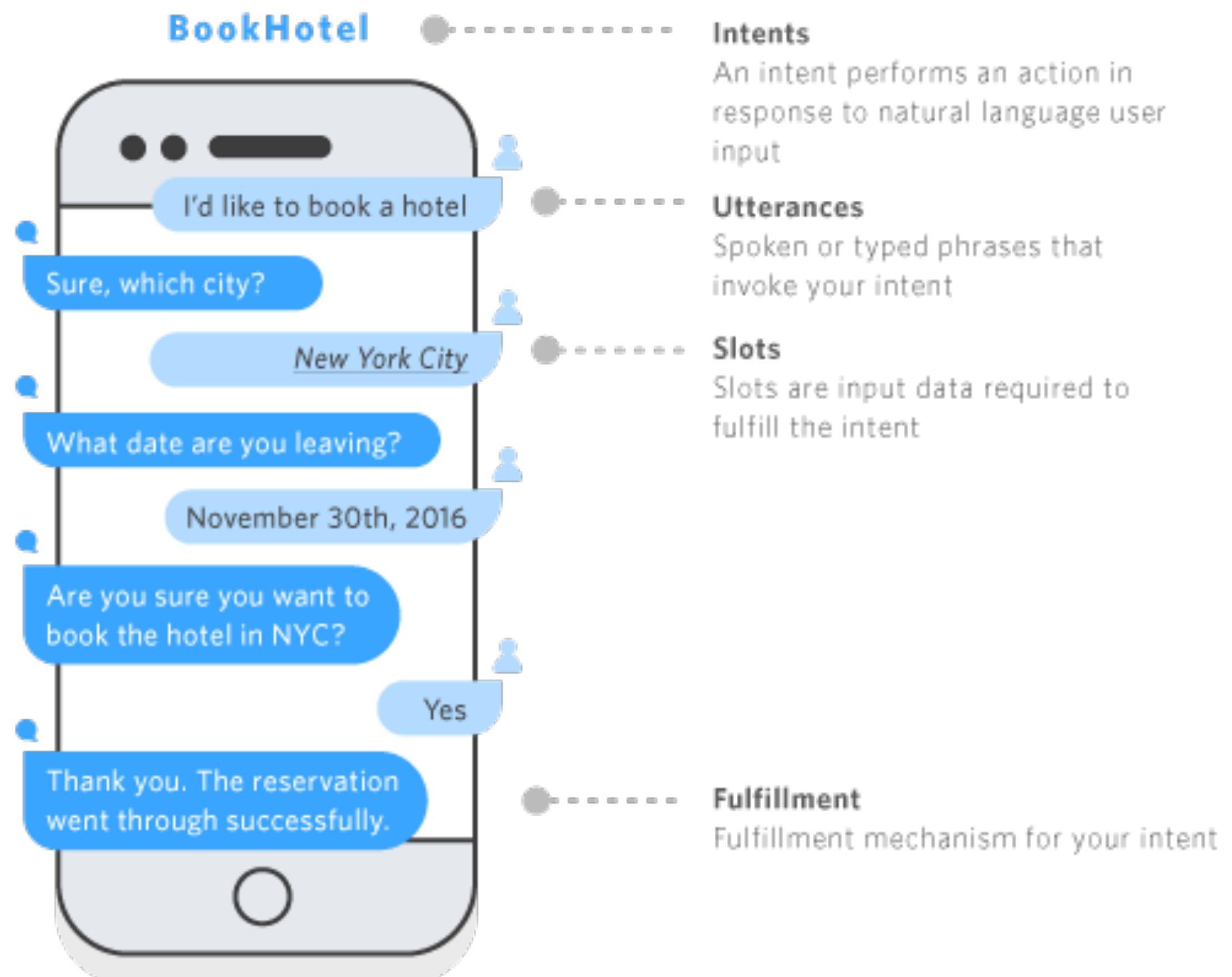
Amazon Lex is a service for building conversational interfaces into any application using voice and text. Amazon Lex provides the advanced deep learning functionalities of automatic speech recognition (ASR) for converting speech to text, and natural language understanding (NLU) to recognize the intent of the text, to enable you to build applications with highly engaging user experiences and lifelike conversational interactions. With Amazon Lex, the same deep learning technologies that power Amazon Alexa are now available to any developer, enabling you to quickly and easily build sophisticated, natural language, conversational bots ("chatbots").

Speech recognition and natural language understanding are some of the most challenging problems to solve in computer science, requiring sophisticated deep learning algorithms to be trained on massive amounts of data and infrastructure. Amazon Lex democratizes these deep

Join the Chatbot Challenge!

AWS Chatbot Challenge

We're on a mission to find the world's greatest chatbots. Build a chatbot that can engage your users with lifelike conversational interactions using Amazon Lex and AWS.



Próximos passos

O'REILLY®

Artificial Intelligence

Peter Norvig
Google

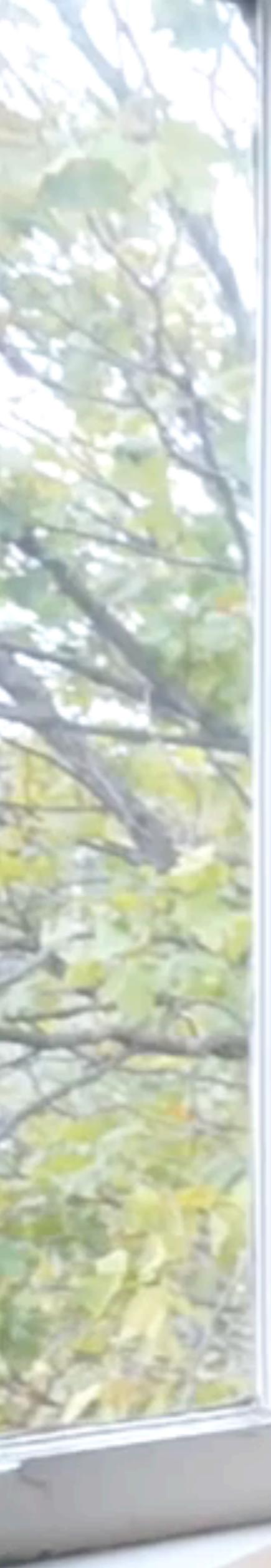


Adding meaning to Natural Language Processing

Jonathan Mugan (DeepGrammar)

What, how, and why: The dynamic of advanced NLG

Kristian Hammond (Narrative Science)



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