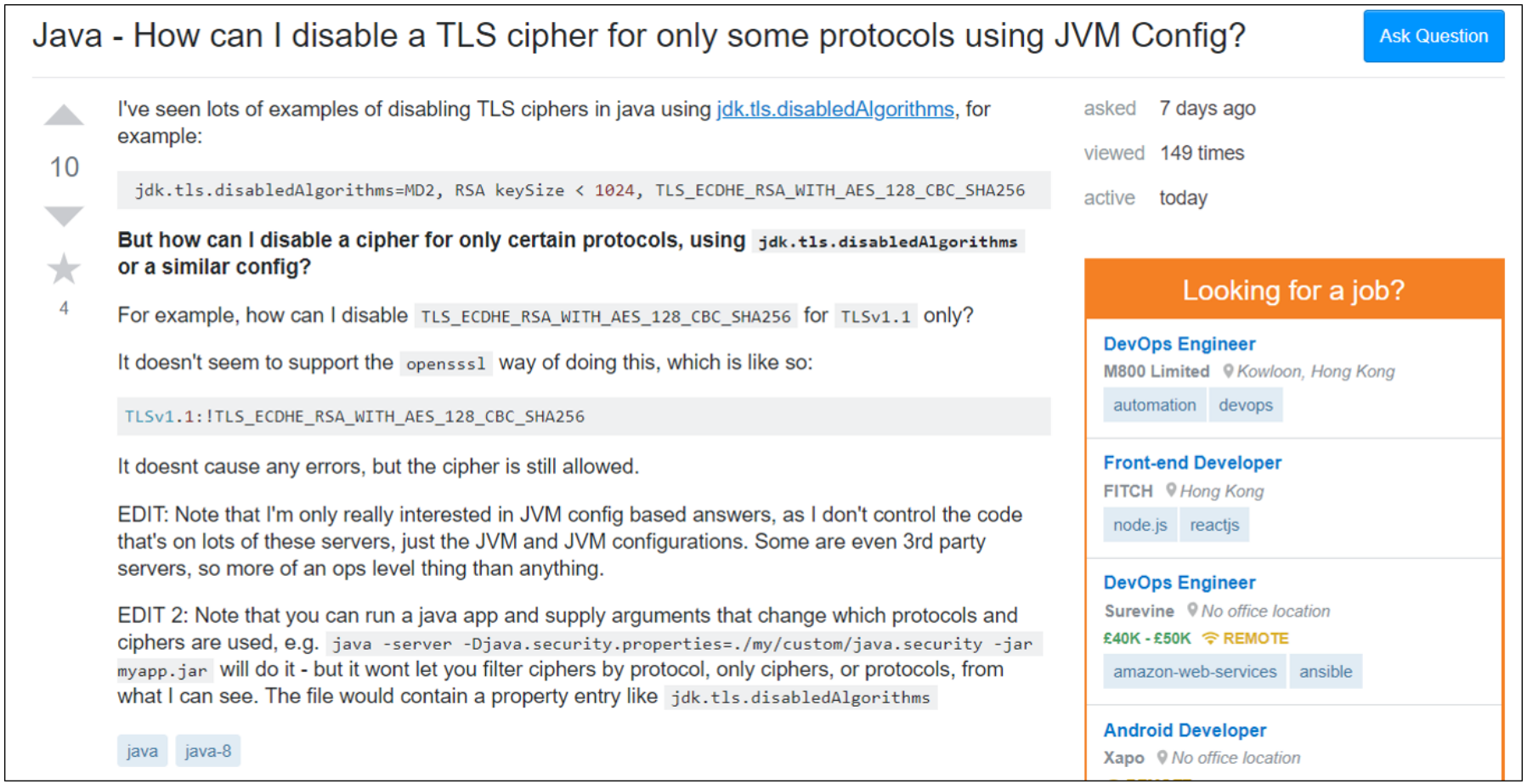
Rules and Facts

- Rules:
  - R1: $\text{Man}(x) \rightarrow \text{Mortal}(x)$
  - R2: $\text{Bird}(x) \rightarrow \text{CanFly}(x)$
- Facts:
  - F1: $\text{Man}(\textit{Socrates})$
  - F2: $\text{Man}(\textit{Plato})$
  - F3: $\text{Bird}(\textit{Parrot}_A)$
- Typically used in expert systems.

QA Archive

- FAQ list
- Question Answering forums:
  - Yahoo! Answers
  - Stack Overflow
  - Quora
  - ...

Stack Overflow - Questions



Java - How can I disable a TLS cipher for only some protocols using JVM Config?

Ask Question

10

4

I've seen lots of examples of disabling TLS ciphers in java using jdk.tls.disabledAlgorithms, for example:

```
jdk.tls.disabledAlgorithms=MD2, RSA keySize < 1024, TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256
```

But how can I disable a cipher for only certain protocols, using `jdk.tls.disabledAlgorithms` or a similar config?

For example, how can I disable `TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256` for `TLSv1.1` only?

It doesn't seem to support the `openssl` way of doing this, which is like so:

```
TLSv1.1:!TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256
```

It doesnt cause any errors, but the cipher is still allowed.

EDIT: Note that I'm only really interested in JVM config based answers, as I don't control the code that's on lots of these servers, just the JVM and JVM configurations. Some are even 3rd party servers, so more of an ops level thing than anything.

EDIT 2: Note that you can run a java app and supply arguments that change which protocols and ciphers are used, e.g. `java -server -Djava.security.properties=./my/custom/java.security -jar myapp.jar` will do it - but it wont let you filter ciphers by protocol, only ciphers, or protocols, from what I can see. The file would contain a property entry like `jdk.tls.disabledAlgorithms`

java java-8

asked 7 days ago

viewed 149 times

active today

Looking for a job?

DevOps Engineer
M800 Limited Kowloon, Hong Kong
automation devops

Front-end Developer
FITCH Hong Kong
node.js reactjs

DevOps Engineer
Surevine No office location
£40K - £50K REMOTE
amazon-web-services ansible

Android Developer
Xapo No office location

Stack Overflow - Answers

2 Answers

active oldest votes

2

JSSE docs say that the `https.protocols` property can store comma separated list of supported protocols in a given SSL context, however this property is used by current JSSE implementation, but could be disregarded by other vendors or future versions, so YMMV.

Programatically you can achieve it like so:

```
SSLSocket socket = (SSLSocket) SSLSocketFactory.getDefault().createSocket();
socket.setEnabledCipherSuites(new String[] {
    CipherSuite.TLS_RSA_WITH_RC4_128_MD5.javaName,
    CipherSuite.TLS_RSA_WITH_RC4_128_SHA.javaName,
});

//allow TLS1.2 only
socket.setEnabledProtocols(new String[] {
    TlsVersion.TLS_1_2.javaName,
});
```

share improve this answer

edited Oct 15 at 10:53

answered Oct 15 at 10:46

diginoise

4,169 • 1 • 15 • 26

1 Thanks for the response... I'm mostly interested in config only options though, as I don't control the code that's on lots of these servers, just the JVM and JVM configurations. Some are even 3rd party servers, so more of an ops thing than anything. If I don't get any config based answers, I'll give it to you ;-) I've added this as a clarification to my question. Thanks! – Brad Parks Oct 16 at 10:43

add a comment

Knowledge Graph

*"The **Knowledge Graph** is a knowledge base used by Google to enhance its search engine's search results with semantic-search information gathered from a wide variety of sources."*

"A Knowledge graph (i) mainly describes real world entities and interrelations, organized in a graph (ii) defines possible classes and relations of entities in a schema" (iii) allows potentially interrelating arbitrary entities with each other... [Paulheim H.]

"We defines a Knowledge Graph as an RDF graph consists of a set of RDF triples where each RDF triple (s,p,o) is an ordered set of following RDF term …." *[Pujara J. al al.]*

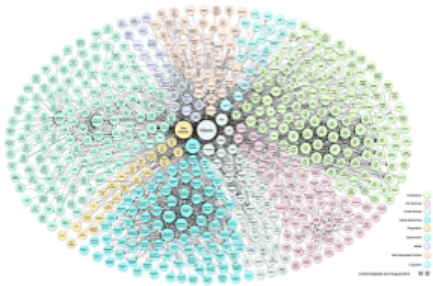
Nitish Aggarwal, et al., Knowledge Graphs: In Theory and Practice, CIKM17 Tutorials

Knowledge Graph

LinkedIn Knowledge Graph

Freebase

DBpedia



yago select knowledge

Amazon Product Graph

Facebook Entity Graph

Microsoft Satori

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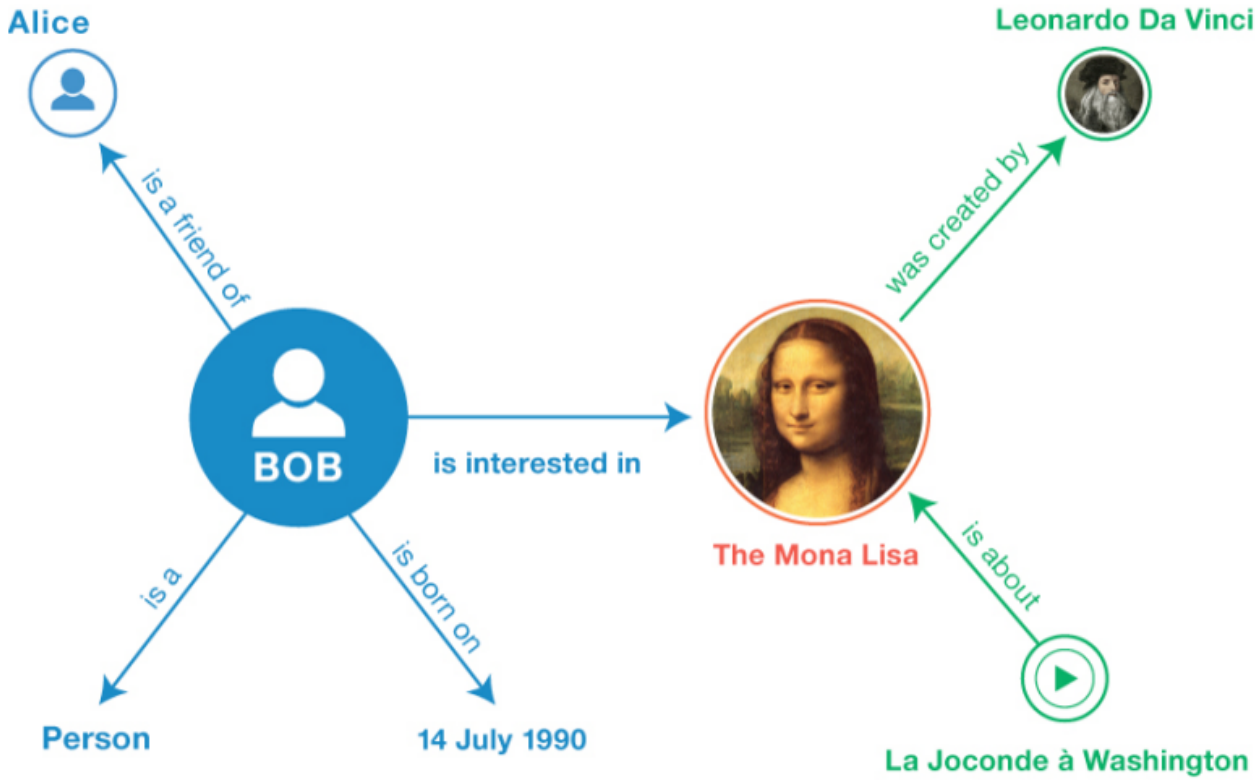
A (very small) Knowledge Graph



http://www.w3.org/TR/2014/NOTE-rdf11-primer-20140225/example-graph.jpg

- The English version of the DBpedia knowledge base describes 4.58 million things, out of which 4.22 million are classified in a consistent ontology, including 1,445,000 persons, 735,000 places (including 478,000 populated places), 411,000 creative works (including 123,000 music albums, 87,000 films and 19,000 video games), 241,000 organizations (including 58,000 companies and 49,000 educational institutions), 251,000 species and 6,000 diseases.
- In addition, we provide localized versions of DBpedia in 125 languages. All these versions together describe 38.3 million things, out of which 23.8 million are localized descriptions of things that also exist in the English version of DBpedia.

DBpedia – Linked Data Fragments

DBpedia 2016-04

Query DBpedia 2016-04 by triple pattern

subject:

predicate:

object: "1899-05-06"^^http://www.w3.org/2001/XMLSchema#date

Find matching triples

Matches in DBpedia 2016-04 for *{ ?s ?p "1899-05-06"^^http://www.w3.org/2001/XMLSchema#da...*

Showing triples 1 to 74 of 74 with 100 triples per page.

```
Billy_Cotton   birthDate   "1899-05-06".
Charlie_Irvis   birthDate   "1899-05-06".
Edward_Grahame_Johnstone   birthDate   "1899-05-06".
Eiliv_Austlid   birthDate   "1899-05-06".
Julio_Vega_Batlle   birthDate   "1899-05-06".
Kenneth_Hand   birthDate   "1899-05-06".
Ralyn_M._Hill   birthDate   "1899-05-06".
Tommy_Magee   birthDate   "1899-05-06".
Wally_Sieb   birthDate   "1899-05-06".
Alfred_Pillinger   deathDate   "1899-05-06".
Earley_F._Poppleton   deathDate   "1899-05-06".
Edward_Butterfield   deathDate   "1899-05-06".
```

DBpedia: Knowledge extraction

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DBpedia: Knowledge extraction

IBM

From Wikipedia, the free encyclopedia
(Redirected from Ibm)

For other uses of IBM, see IBM (disambiguation). "Big Blue" redirects here. It is not to be confused with New York Giants. For other uses of Big Blue, see Big Blue (disambiguation).

IBM (International Business Machines Corporation) is an American multinational technology company headquartered in Armonk, New York, United States, with operations in over 170 countries. The company originated in 1911 as the Computing-Tabulating-Recording Company (CTR) and was renamed "International Business Machines" in 1924.

IBM manufactures and markets computers hardware, middleware and software, and offers hosting and consulting services in areas ranging from mainframe computers to nanotechnology. IBM is also a major research organization, holding the record for most patents generated by a business (as of 2017) for 24 consecutive years.[5] Inventions by IBM include the automated teller machine (ATM), the PC, the floppy disk, the hard disk drive, the magnetic stripe card, the relational database, the SQL programming language, the UPC barcode, and dynamic random-access memory (DRAM). The IBM mainframe, exemplified by the System/360, was the dominant computing platform during the 1960s and 1970s.

IBM has continually shifted its business mix by commoditizing markets focusing on higher-value, more profitable markets. This includes spinning off printer manufacturer Lexmark in 1991 and selling off its personal computer (ThinkPad/ThinkCentre) and x86-based server businesses to Lenovo (2005 and 2014, respectively), and acquiring companies such as PwC Consulting (2002), SPSS (2009), and The Weather Company (2016). Also in 2014, IBM announced that it would go "fabless", continuing to design semiconductors, but offloading manufacturing to GlobalFoundries.

Nicknamed **Big Blue**, IBM is one of 30 companies included in the Dow Jones Industrial Average and one of the world's largest employers, with (as of 2016) nearly 380,000 employees. Known as "IBMers", IBM employees have been awarded five Nobel Prizes, six Turing Awards, ten National Medals of Technology and five National Medals of Science.

Contents [hide]

1 History
2 Headquarters and offices
3 Products and services
4 Research
5 Brand and reputation
6 People and culture
6.1 Employees
6.1.1 IBM alumni
6.2 Board and shareholders
7 See also
8 References
9 Further reading
10 External links

<head entity>, <rel> < tail entity >

Wikipedia Infobox

History [edit]

Main article: History of IBM

In the 1880s, technologies emerged that would ultimately form the core of International Business Machines (IBM). Julius E. Pitrat patented the computing scale in 1885;[6] Alexander Dey invented the dial recorder (1888);[7] Herman Hollerith patented the Electric Tabulating Machine;[8] and Willard Bundy invented a time clock to record a worker's arrival and departure time on a paper tape in 1889.[9] On June 16, 1911, their four companies were amalgamated in New York State by Charles Ranlett Flint forming a fifth company, the Computing-Tabulating-Recording Company (CTR) based in Endicott, New York.[1][10] The five companies had 1,300 employees and offices and plants in Endicott and Binghamton, New York; Dayton, Ohio; Detroit, Michigan; Washington, D.C.; and Toronto. They manufactured machinery for sale and lease, ranging from commercial scales and industrial time recorders, meat and cheese slicers, to tabulators and punched cards. Thomas J. Watson, Sr., fired from the National Cash Register Company by John Henry Patterson, called on Flint and, in 1914, was offered CTR.[11] Watson joined CTR as *General Manager* then, 11 months later, was made *President* when court cases relating to his time at NCR were resolved.[12] Having learned Patterson's pioneering business practices, Watson proceeded to put the stamp of NCR onto CTR's companies.[13] He implemented sales conventions, "generous sales incentives, a focus on customer service, an insistence on well-groomed, dark-suited salesmen and had an evangelical fervor for instilling company pride and loyalty in every worker".[14][15] His favorite slogan, "THINK", became a mantra for each company's employees.[14] During Watson's first four years, revenues reached $9 million and the company's operations expanded to Europe, South America, Asia and Australia.[14] "Watson had never liked the clumsy hyphenated title of the CTR" and in 1924 chose to replace it with the more expansive

International Business Machines Corporation

Logo as of 1972

IBM Watson system in 2011

Type	Public
Traded as	NYSE: IBM DJIA Component S&P 100 Component S&P 500 Component
ISIN	US4592001014
Industry	Cloud computing · Cognitive computing
Founded	June 16, 1911; 106 years ago (as Computing-Tabulating-Recording Company) Endicott, New York, U.S.[1]
Founder	Charles Ranlett Flint
Headquarters	Armonk, New York, U.S.
Area served	177 countries[2]
Key people	Ginni Rometty (Chairwoman, President and CEO)
Products	See IBM products
Revenue	▼ US$ 79.919 billion (2016)[3]
Operating income	▼ US$ 13.031 billion (2016)[3]
Net income	▼ US$ 11.872 billion (2016)[3]
Total assets	▲ US$ 117.47 billion (2016)[3]
Total equity	▲ US$ 18.392 billion (2016)[3]
Number of employees	380,000 (2016)[4]
Website	www.ibm.com

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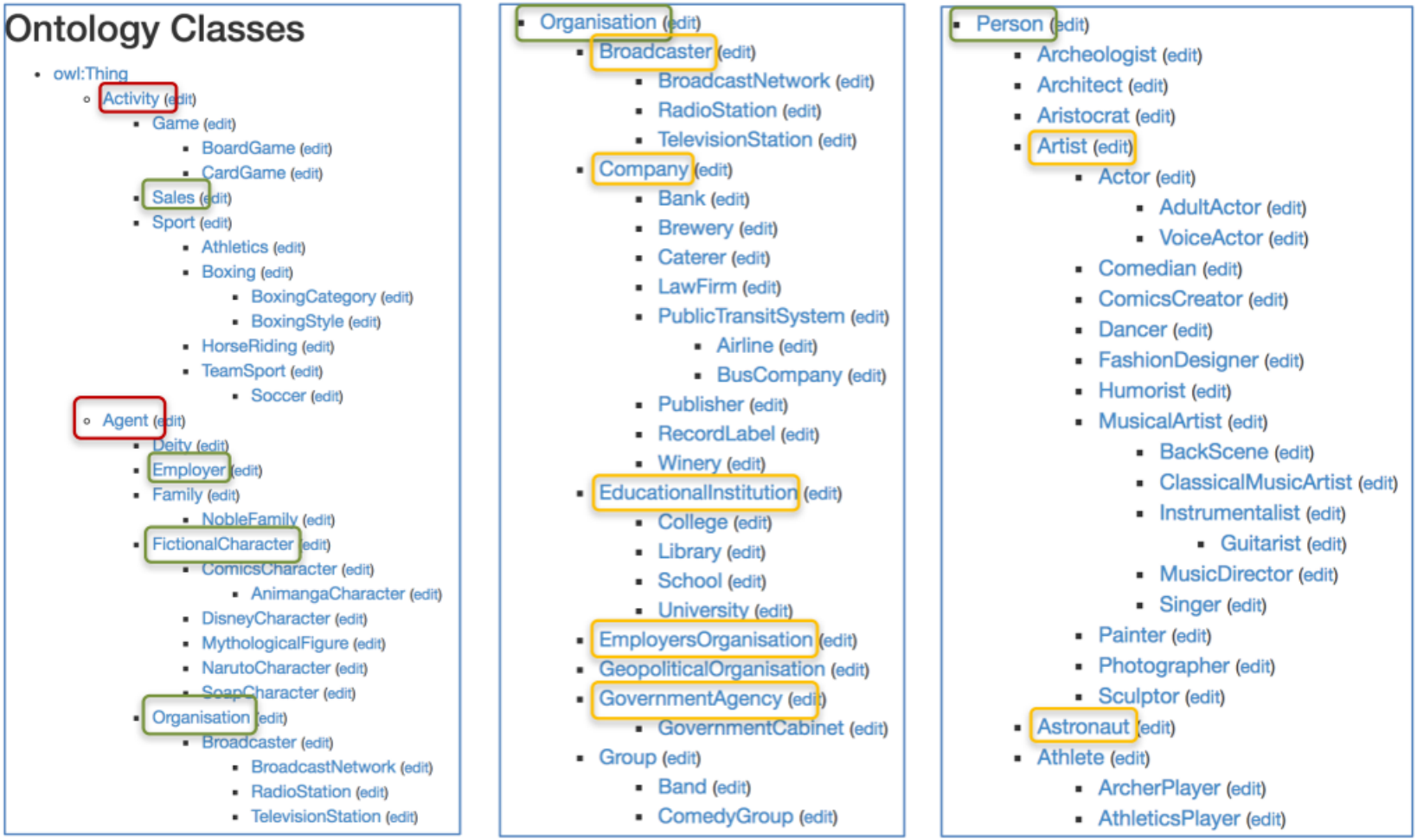
DBpedia: Knowledge extraction



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DBpedia: Knowledge extraction

Properties on *Actor*:

Name	Label	Domain	Range
academyAward (edit)	Academy Award	Artist	Award
afiAward (edit)	AFI Award	Artist	Award
arielAward (edit)	Ariel Award	Actor	Award
associatedAct (edit)	associated act	Artist	Artist
baftaAward (edit)	BAFTA Award	Artist	Award
cesarAward (edit)	Cesar Award	Artist	Award
disciple (edit)	disciple	Artist	Artist
dutchRKDCode (edit)	Dutch RKD code	Artist	*xsd:string*
emmyAward (edit)	Emmy Award	Artist	Award
field (edit)	field	Artist	owl:Thing
filmFareAward (edit)	Film Fare Award	Artist	Award
gaudiAward (edit)	Gaudí Award	Artist	Award
geminiAward (edit)	Gemini Award	Actor	Award
goldenCalfAward (edit)	Golden Calf Award	Actor	Award
goldenGlobeAward (edit)	Golden Globe Award	Artist	Award
goldenRaspberryAward (edit)	Golden Raspberry Award	Actor	Award
goyaAward (edit)	Goya Award	Artist	Award
grammyAward (edit)	Grammy Award	Artist	Award
iftaAward (edit)	IFTA Award	Actor	Award

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Content

3 Question Answering
- System structure
- Knowledge sources
- Techniques: knowledge representation
- Techniques: question understanding
- Techniques: answer generation
- Open domain QA
- Machine reading comprehension (MRC)

Knowledge representation

=> Linguistic Annotations

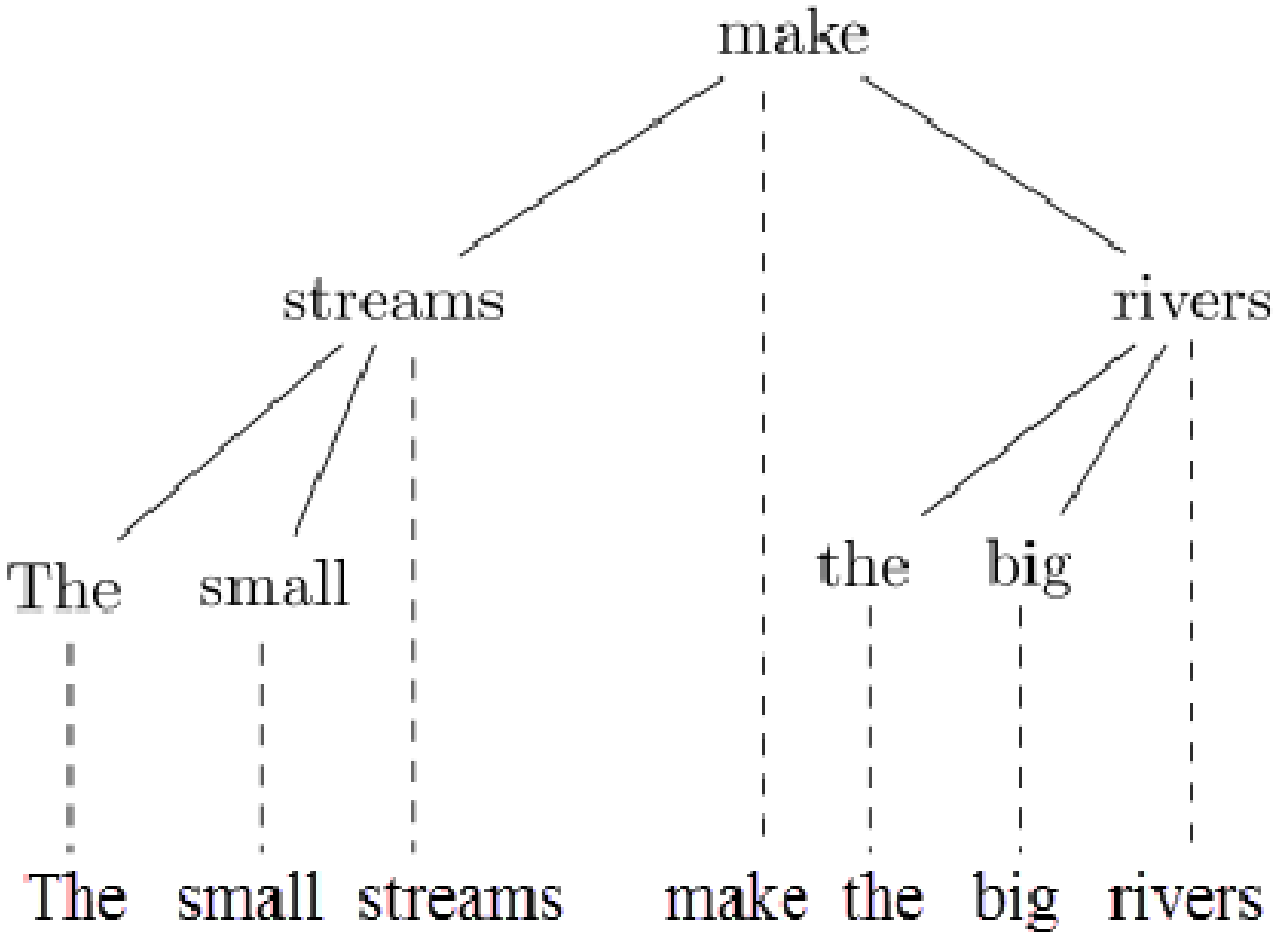
=> Statistical Representation

=> Neural Representation

Linguistic annotations

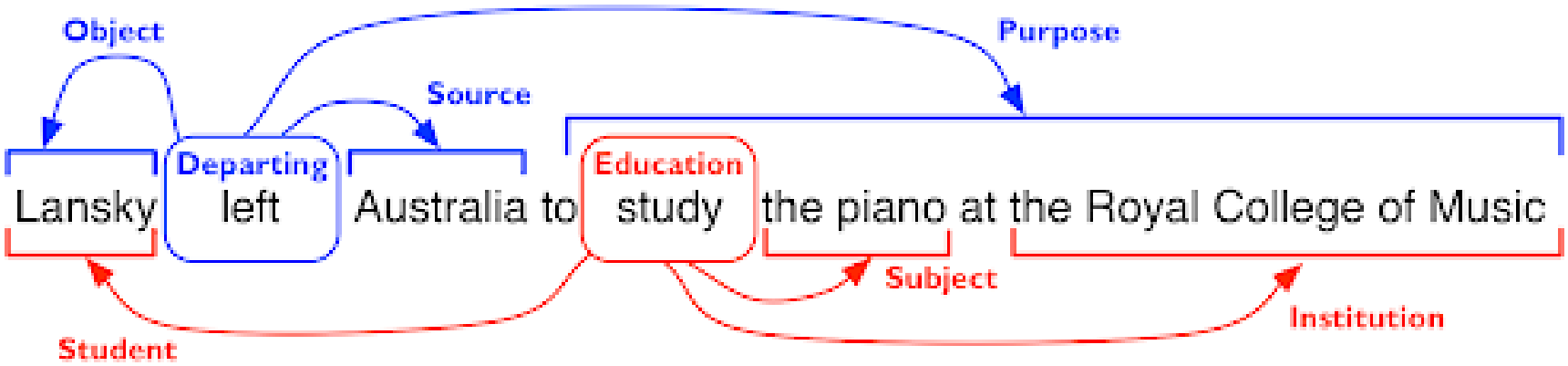
- Part-of-Speech Tagging
- Syntactic Parsing: Constituent or Dependency
- Named Entities
- Entity Relations
- Events
- Anaphora, Co-Reference and Mentions
- Rhetorical Structures
- Semantic Role Labelling
- Word Senses
- Sentiments

Dependency trees



Haitao Liu, et al. "Dependency distance: a new perspective on syntactic patterns in natural languages." Physics of life reviews 21 2017

Semantic role labeling



http://ivan-titov.org/topics/semantics.html

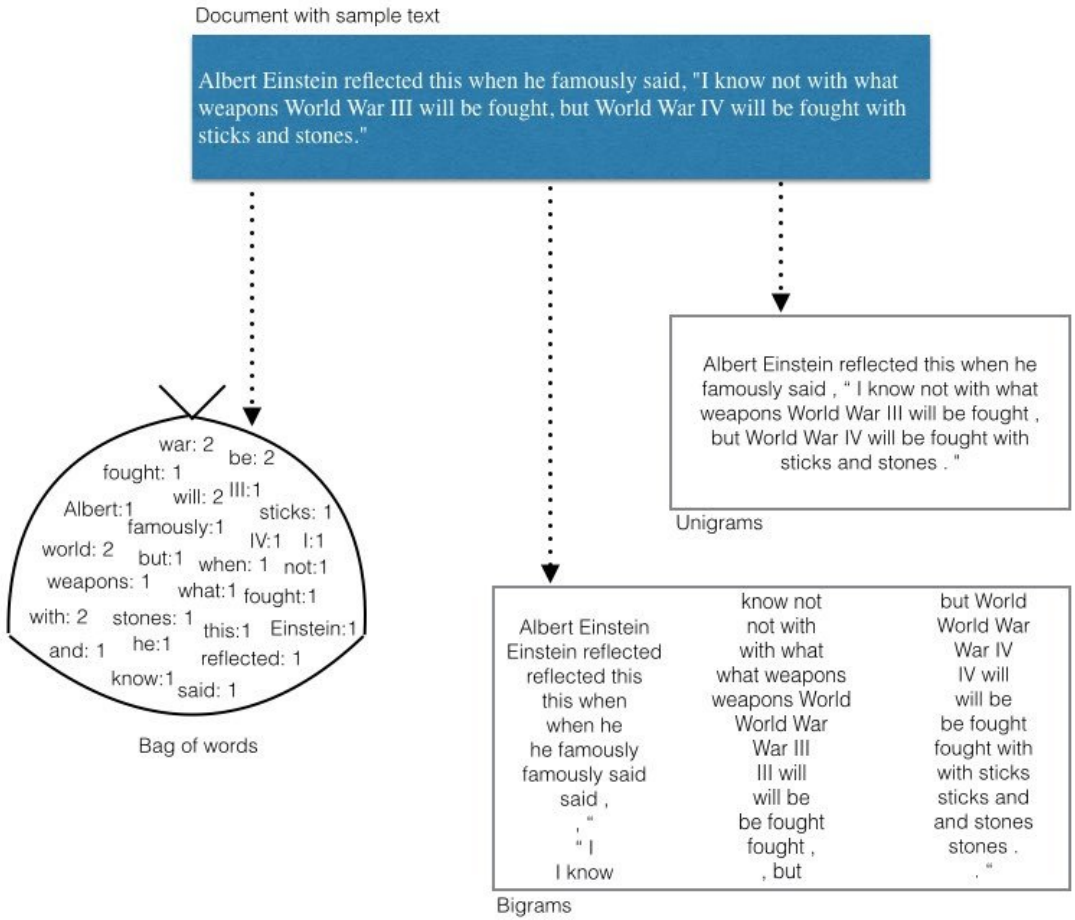
Knowledge representation

=> Linguistic Annotations

=> Statistical Representation

=> Neural Representation

Bag-of-Words and Bag-of-Ngrams



https://qph.fs.quoracdn.net/main-qimg-c47060d2f02439a44795e2fbcf2ca347.webp

Vector Space Model and TF-IDF

- Vector space model represent a document as a high dimensional vector rather than a set (bag).
- TF-IDF is the most commonly used weighing schema in VSM in information retrieval
  - TF: term frequency
  - IDF: inverse document frequence

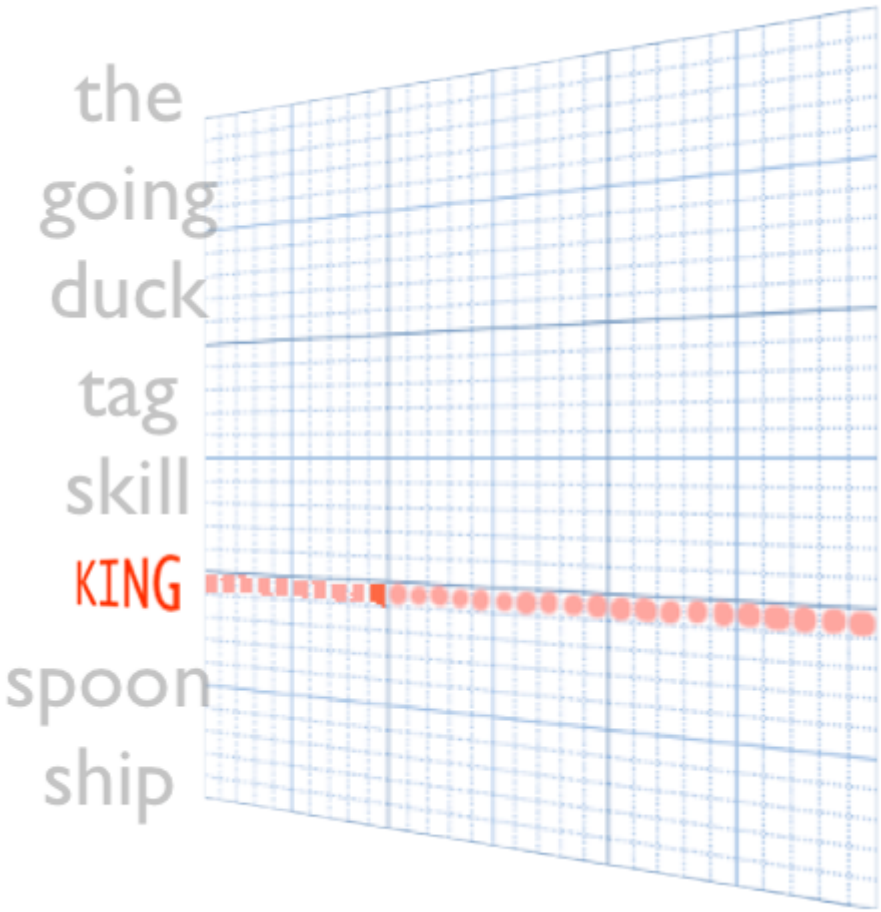
Knowledge representation

=> Linguistic Annotations

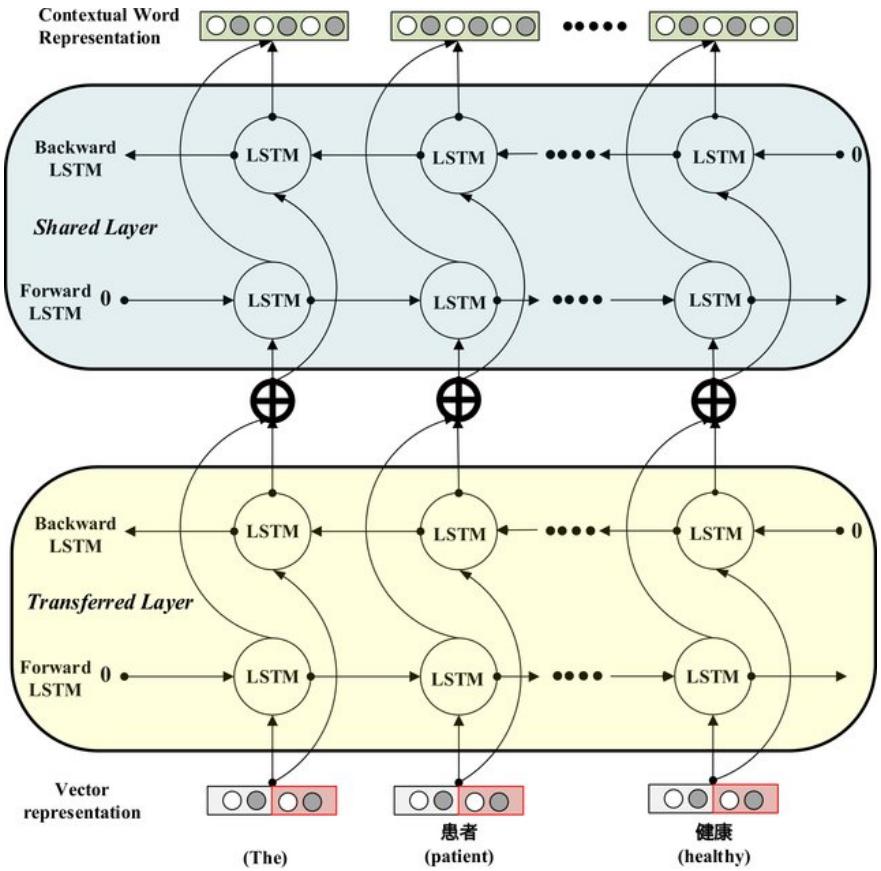
=> Statistical Representation

=> Neural Representation

Word embeddings



Contextual word embeddings



Dong et al., Deep learning for named entity recognition on Chinese electronic medical records: Combining deep transfer learning with multitask bi-directional LSTM RNN, PLoS ONE 14(5):e0216046, 2019

Sentence embeddings

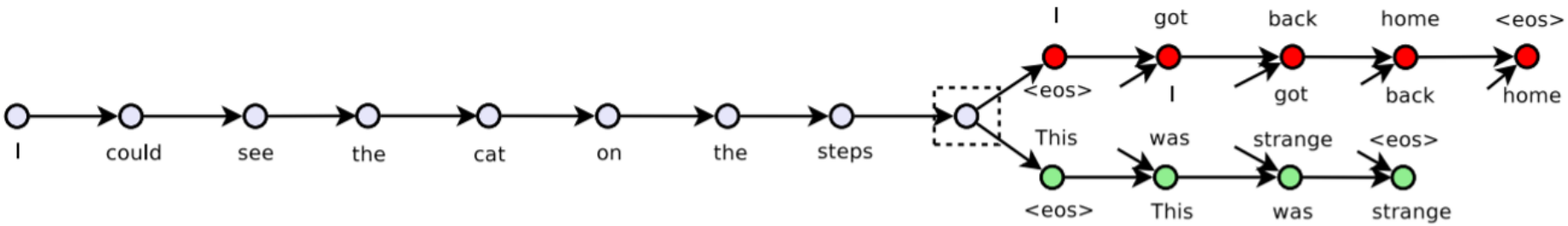
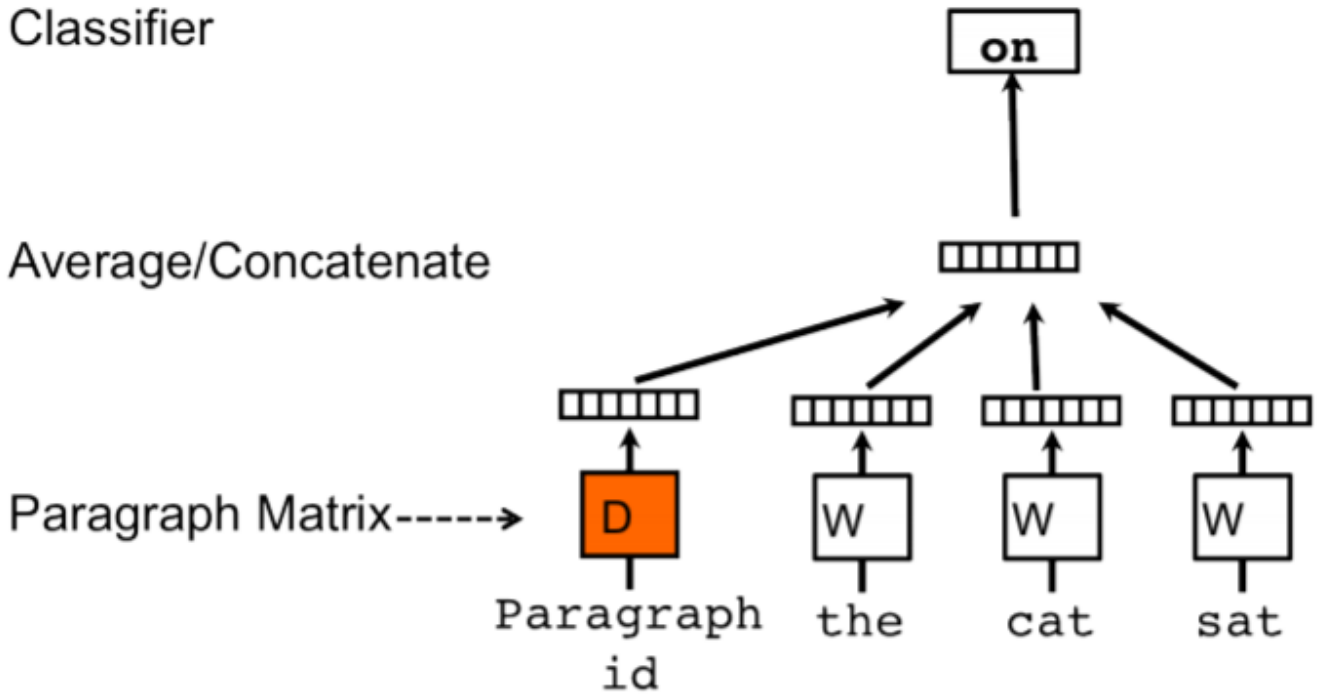


Figure 1: The skip-thoughts model. Given a tuple (s_{i-1}, s_i, s_{i+1}) of contiguous sentences, with s_i the i-th sentence of a book, the sentence s_i is encoded and tries to reconstruct the previous sentence s_{i-1} and next sentence s_{i+1}. In this example, the input is the sentence triplet *I got back home. I could see the cat on the steps. This was strange.* Unattached arrows are connected to the encoder output. Colors indicate which components share parameters. $\langle$eos$\rangle$ is the end of sentence token.

Kiros, Ryan, et al. "Skip-thought vectors." Advances in neural information processing systems. 2015

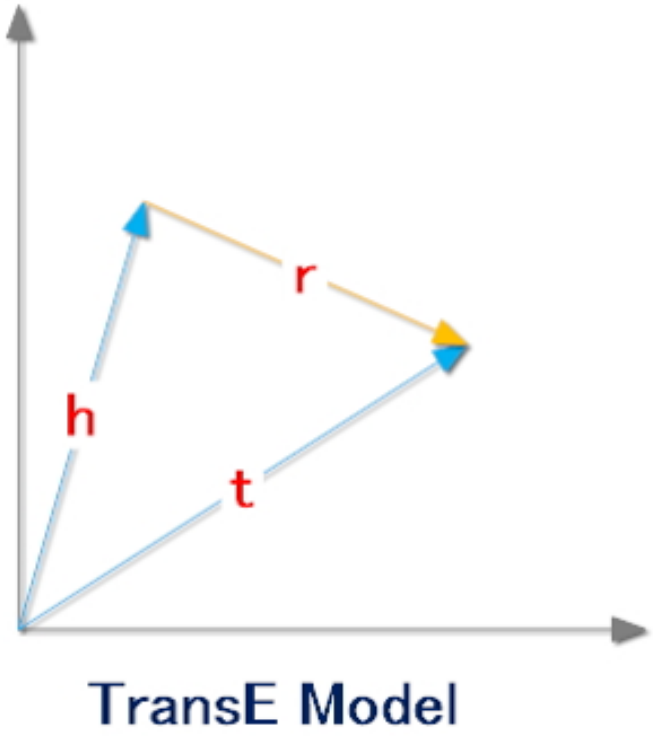
Document embeddings

Doc2Vec



A gentle introduction to Doc2Vec

Knowledge embeddings



Bordes, et al., Translating embeddings for modeling multi-relational data, Adv. Neural Inf. Process. Syst., 2013

Content

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Question understanding

- Pattern Matching
- Similar Question Retrieval
- Question Paraphrasing
- Question Classification and Slot Filling
- Semantic Parsing

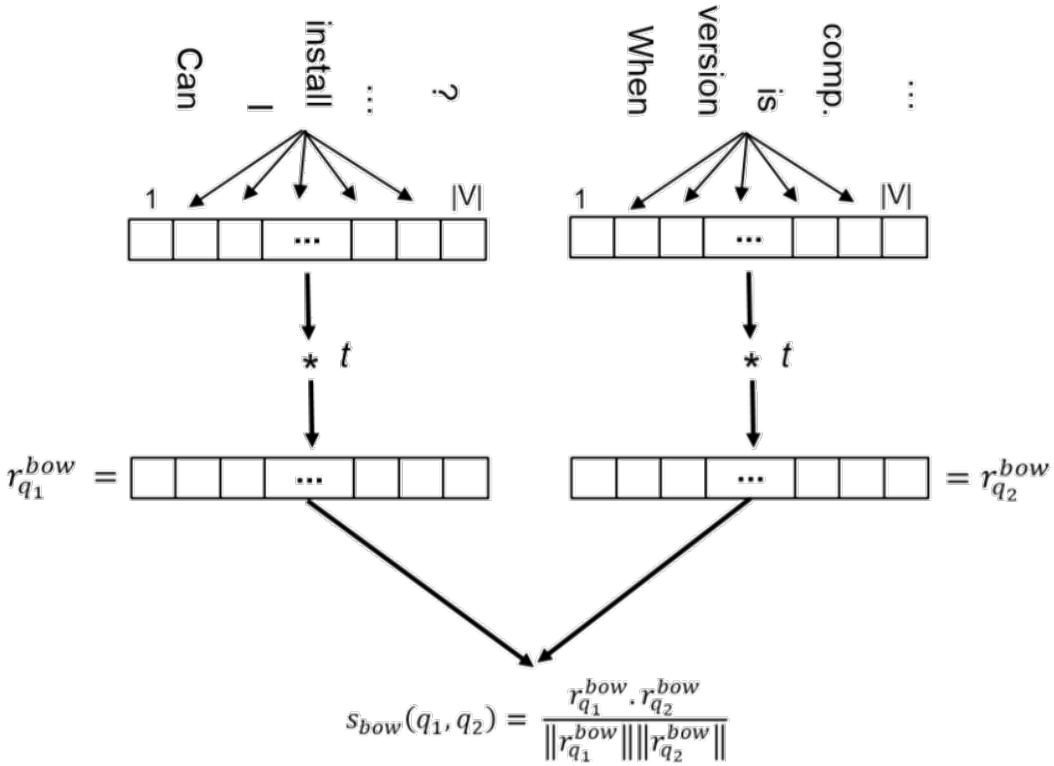
Pattern matching

- Example: Who is X of Y?
  - Who is the first president of US?
  - Who is the second husband of Wendi Deng?
- Accurate Understanding
- Low Coverage
- Only suitable for very small domain

Equivalent Question Retrieval

- Basic ideas:
  - Retrieve existing questions with the query using an IR technologies;
  - Select the best one from the top ranked question returned by the IR system, using some similarity metrics;
- Can be used in scenarios like community QA or open-domain QA.

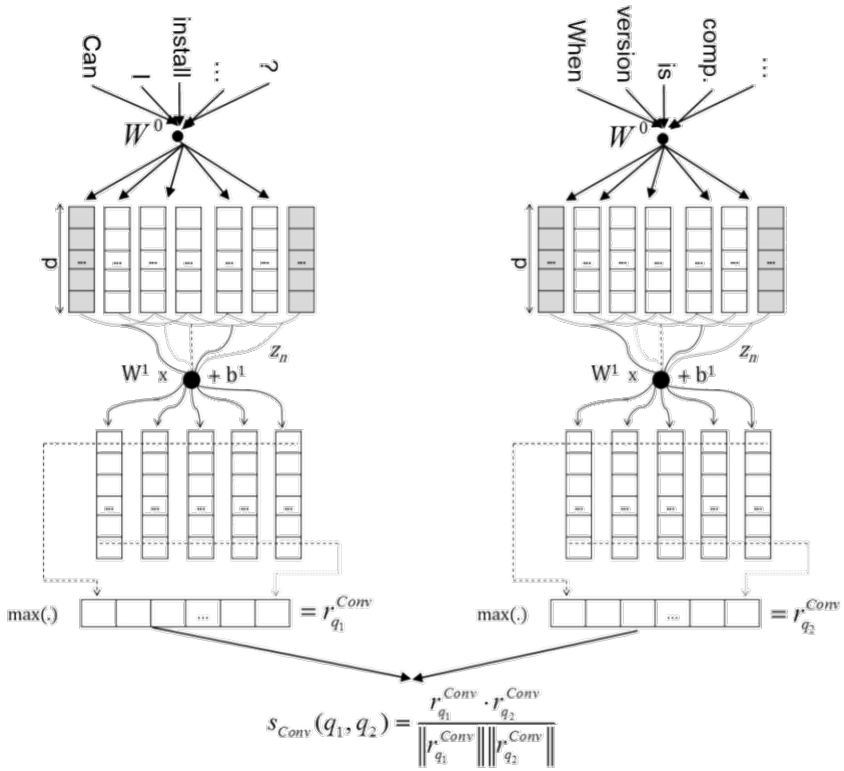
Equivalent Question Retrieval



Question retrieval with bag-of-words similarity

Dos Santos, et al., Learning hybrid representations to retrieve semantically equivalent questions. ACL-IJCNLP2015

Equivalent Question Retrieval

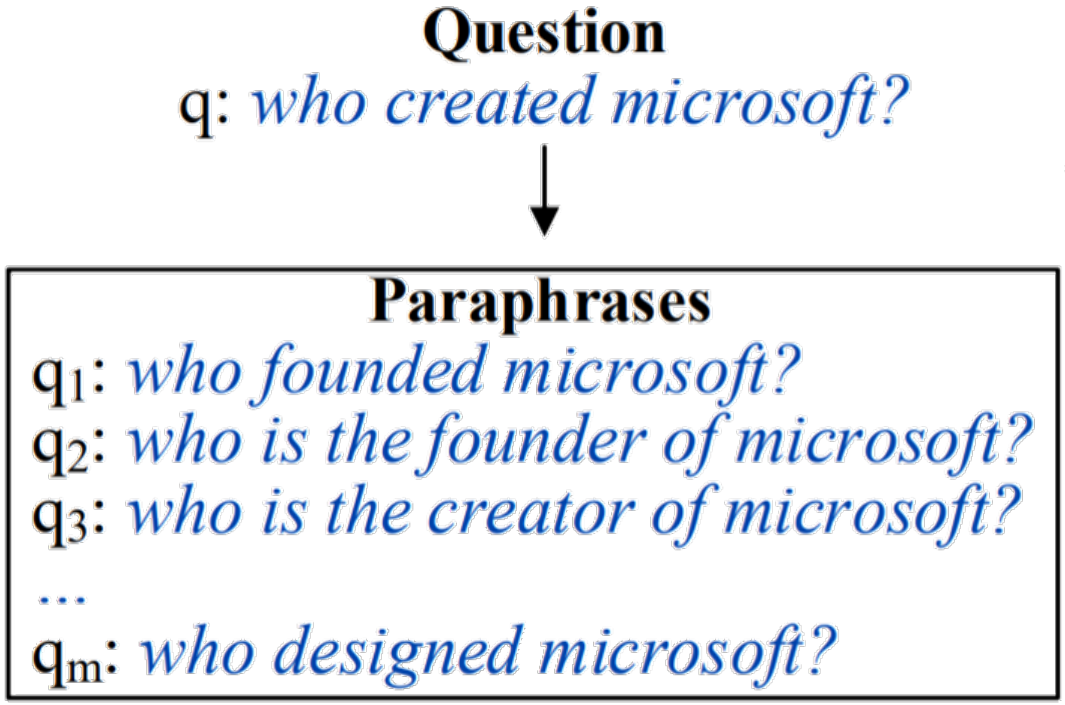


Question retrieval with convolutional similarity

Dos Santos, et al., Learning hybrid representations to retrieve semantically equivalent questions. ACL-IJCNLP2015

Question paraphrasing

Question Paraphrasing is effective for most QA tasks.



Li Dong, et al„ Learning to Paraphrase for Question Answering, arXiv:1708.06022, 2017

Question classification

- Classification by answer types:
  - Factual questions: What is the largest city ... ?
  - Opinions: What is the authors' attitude ...?
  - Summaries: What are the arguments for and against ...?
- Classification by speech acts:
  - Yes/No questions: Is it true that ...?
  - WH questions: Who was the first president ...?
  - Indirect request: I would like you to list ... .
  - Commands: Name all presidents ... .
- Complex / difficult questions:
  - Why/How questions: How to build a house?
  - What questions: What did they do?

Question classification

Class	#	Class	#
ABBREV.	9	description	7
abb	1	manner	2
exp	8	reason	6
ENTITY	94	**HUMAN**	65
animal	16	group	6
body	2	individual	55
color	10	title	1
creative	0	description	3
currency	6	**LOCATION**	81
dis.med.	2	city	18
event	2	country	3
food	4	mountain	3
instrument	1	other	50
lang	2	state	7
letter	0	**NUMERIC**	113
other	12	code	0
plant	5	count	9
product	4	date	47
religion	0	distance	16
sport	1	money	3
substance	15	order	0
symbol	0	other	12
technique	1	period	8
term	7	percent	3
vehicle	4	speed	6
word	0	temp	5
DESCRIPTION	138	size	0
definition	123	weight	4

The distribution of 500 TREC 10 questions over the question hierarchy.

Xin Li and Dan Roth. "Learning question classifiers." COLING 2002.

Slot filling

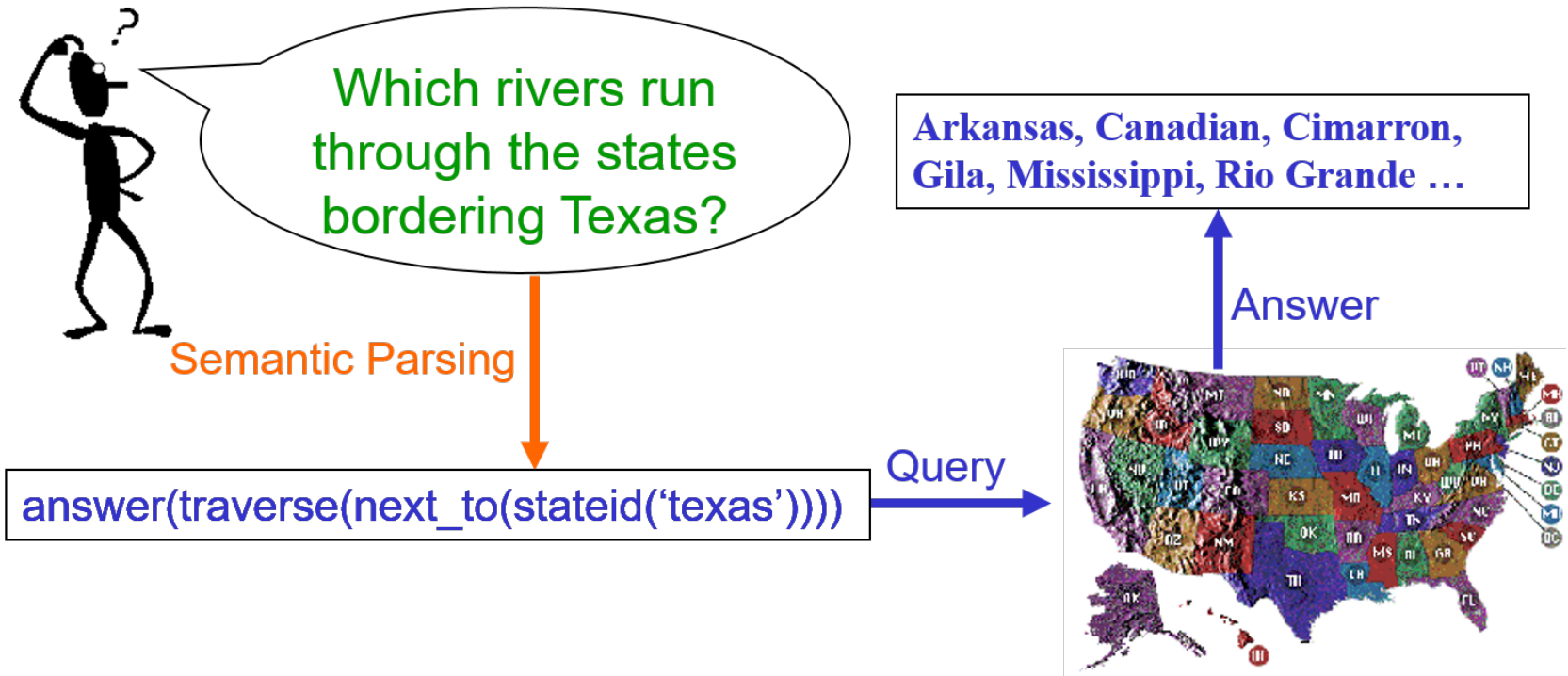
- Question classification gives a fine grained understanding of user's intent.
- Give a class of questions, there are slots to be filled to give the details of the question.
- Example:
  - Input: When did the Second World War break out?
  - Output:
    - Classification: TIME
    - Slots:
      Events: BREAK_OUT
      Subjects: the Second World War

Semantic parsing

- Convert a natural language sentence to a semantic representation, for example:
  - Logic forms
  - Lambda Calculus
  - SQL
  - SPARQL
  - Programming language scripts: Prolog, Lisp, Python, etc.

Semantic parsing: An example

- Query application for U.S. geography database containing about 800 facts [Zelle & Mooney, 1996]



Raymond J. Mooney, Semantic Parsing for Question Answering (slides).

Content

3 Question Answering
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Answer generation

- Answer retrieval
- Answer extraction
- Answer ranking
- Database querying
- Knowledgebase query
- Rule-based inference engine
- Inference over knowledge graphs
- Answer Generation

Answer retrieval

- Find the paragraphs which are related to the question, from a large collection text
- Approaches:
  - Build a paragraph-based search engine.
  - Use an existing search engine to find a list of documents, then find the most relevant paragraphs
- A subtask for Web-based QA (Open domain QA)
- Technologies: IR

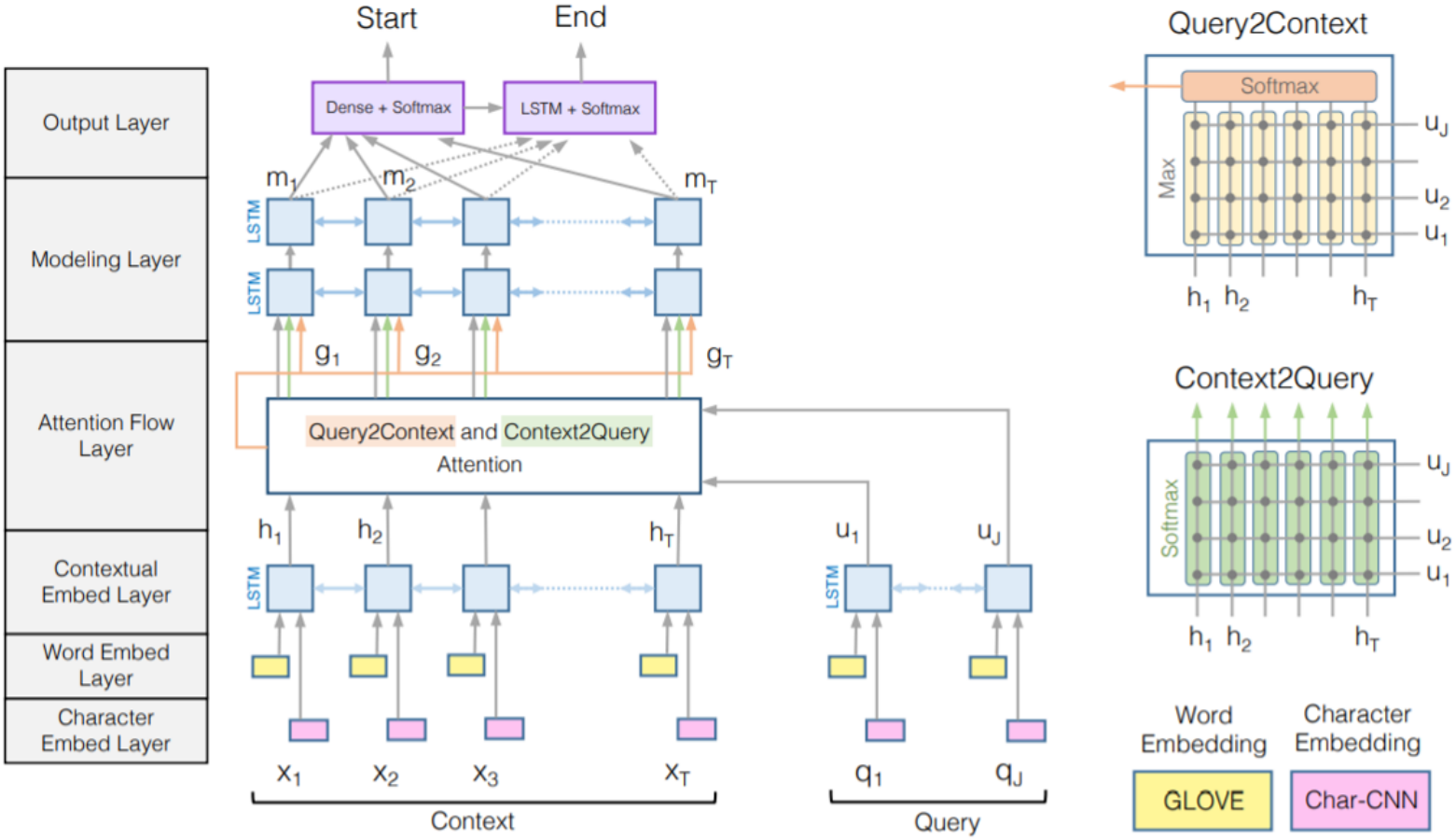
Answer ranking

- When multiple answer candidates are obtained / generated, a ranking algorithm will be used to find the best answer.
- Technology: Learning to rank

Answer extraction

- From a given piece of text, extract the word or phrase which can answer the question exactly.
- The task could be implemented by finding the start word and the end word of the answer in the text.
- Answer extraction is used in Open Domain QA and Machine Reading Comprehension.

Answer extraction



Seo, Min Joon et al. Bidirectional Attention Flow for Machine Comprehension. CoRR abs/1611.01603, 2016

Database querying

- For NLIDB:
  - The user's question is converted to a database query (for example, a SQL statement) by the question understanding module.
  - The query is then sent to the database which returns a result.
  - The result is sent back to the user as the answer, possibly after post-processing by an anwer generation module.

Knowledgebase querying

- For KBQA or KGQA:
  - The user's question is converted to a knowledge base (or knowledge graph) query (for example, a SparQL statement) by the question understanding module.
  - The query is then sent to the knowledge base (or knowledge graph) which returns a result.
  - The result is sent back to the user as the answer, possibly after post-processing by an anwer generation module.

SparQL Query

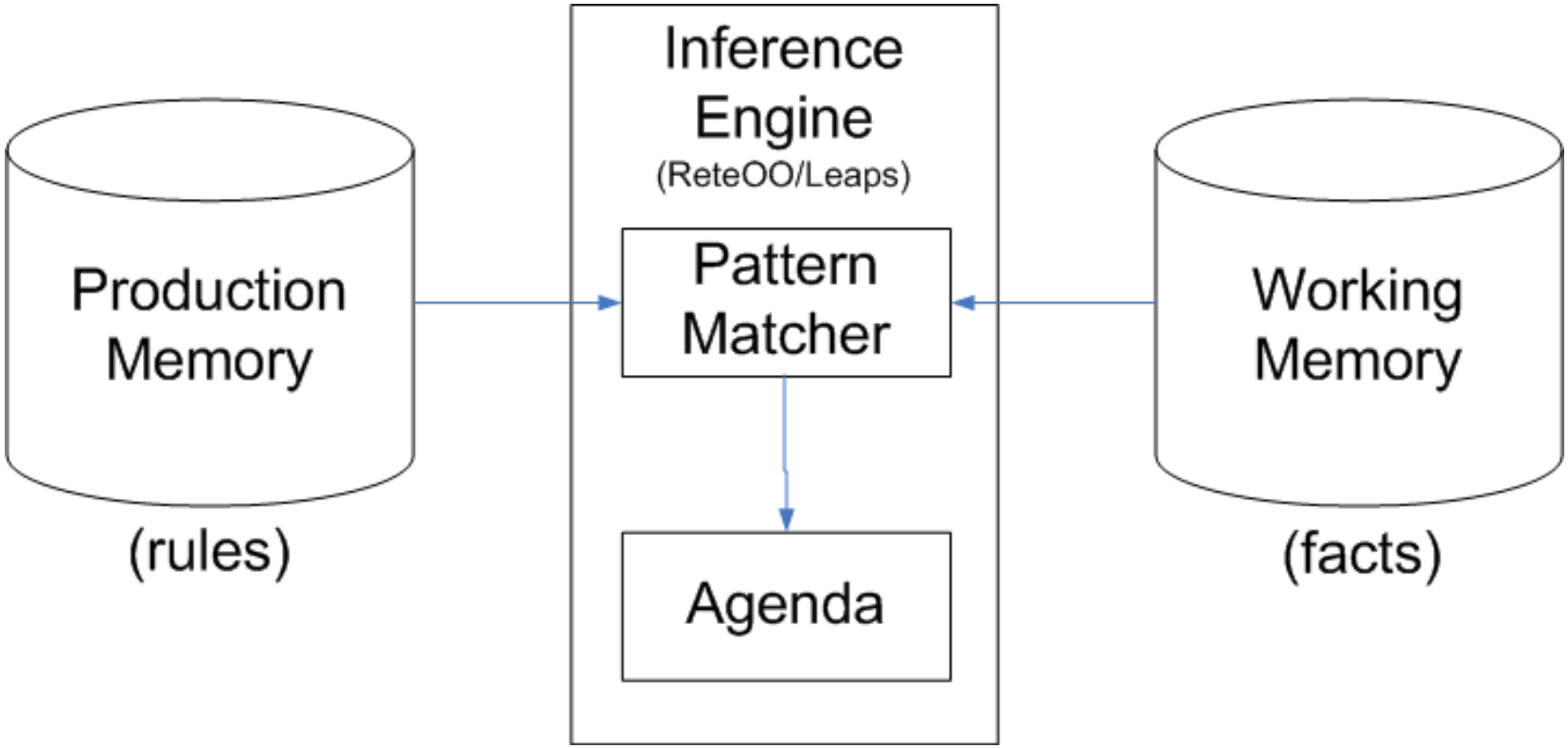
hrefhttps://wiki.lyrasis.org/display/VIVODOC110x/SPARQL+QueriesVIVO 1.10.x Documentation: SPARQL Queries

Rule-based inference engine

- Inference engine is a component of the system that applies logical rules to the knowledge base to deduce new information.
- The first inference engines were components of expert systems. The typical expert system consisted of a knowledge base and an inference engine.
- The knowledge base stored facts about the world.
- The inference engine applies logical rules to the knowledge base and deduced new knowledge.
- This process would iterate as each new fact in the knowledge base could trigger additional rules in the inference engine.

Wikipedia: Inference Engine

Rule-based inference engine



Fernandes et al., A rule-based system proposal to aid in the evaluation..., arXiv:1811.12454