

method	accuracy (%)	precision (%)	recall (%)	F-measure (%)
Bensley & Hickl (2008)	74.6	–	–	–
Iftene (2008)	72.1	65.5	93.2	76.9
Siblini & Kosseim (2008)	68.8	–	–	–
Wang & Neumann (2008)	70.6	–	–	–
BASE 1	50.0	50.0	100.0	66.7
BASE 2	54.9	53.6	73.6	62.0

TABLE 1.1 – Textual entailment recognition results (for two classes) on the RTE-4 corpus (Androutsopoulos et Malakasiotis, 2010)

Main ideas discussed	R-TE	R-P	G-TE	G-P	E-TE	E-P
Logic-based inferencing	X	X				
Vector space semantic models		X				
Surface string similarity measures	X	X				
Syntactic similarity measures	X	X				
Similarity measures on symbolic meaning representations	X	X				
Machine learning algorithms	X	X		X		X
Decoding (transformation sequences)	X	X		X		
Word/sentence alignment	X			X		X
Pivot language(s)				X		X
Bootstrapping			X	X	X	X
Distributional hypothesis			X	X	X	X
Synchronous grammar rules				X		X

TABLE 1.2 – Main ideas discussed and tasks they have mostly been used in. R : recognition ; G : generation, E : extraction ; TE : textual entailment, P : paraphrasing. (Androutsopoulos et Malakasiotis, 2010)

Main ideas discussed	Main typically required resources
Logical-based inferencing	Parser producing logical meaning representations, inferencing engine, resources to extract meaning postulates and common sense knowledge from.
Vector space semantic models	Large monolingual corpus, possibly parser.
Surface string similarity measures	Only preprocessing tools, e.g., POS tagger, named-entity recognizer, which are also required by most other methods.
Syntactic similarity measures	Parser.
Similarity measures operating on symbolic meaning representations	Lexical semantic resources, possibly parser and/or semantic role labeling to produce semantic representations.
Machine learning algorithms	Training/testing datasets, components/resources needed to compute features.
Decoding (transformation sequences)	Synonyms, hypernyms-hyponyms, paraphrasing/TE rules.
Word/sentence alignment	Large parallel or comparable corpora (monolingual or multilingual), possibly parser.
Pivot language(s)	Multilingual parallel corpora.
Bootstrapping	Large monolingual corpus, recognizer.
Distributional hypothesis	Monolingual corpus (possibly parallel or comparable).
Synchronous grammar rules	Monolingual parallel corpus.

TABLE 1.3 – Main ideas discussed and main resources they typically require. (Androutsopoulos et Malakasiotis, 2010)

Table 1.1: Examples of Text-Hypothesis pairs, taken from the RTE-2 development set, along with the application (Task) from which they were derived and the human annotation of whether the pair satisfies the entailment relation or not (Judgment). SUM=summarization; IR=information retrieval; IE=information extraction; QA=question answering. See Section 1.4 for the data-set generation methodology

ID	Text	Hypothesis	Task	Judgment
77	Google and NASA announced a working agreement, Wednesday, that could result in the Internet giant building a complex of up to 1 million square feet on NASA-owned property, adjacent to Moffett Field, near Mountain View.	Google may build a campus on NASA property.	SUM	YES
110	Drew Walker, NHS Tayside’s public health director, said: “It is important to stress that this is not a confirmed case of rabies.”	A case of rabies was confirmed.	IR	NO
294	Meanwhile, in an exclusive interview with a TIME journalist, the first one-on-one session given to a Western print publication since his election as president of Iran earlier this year, Ahmadinejad attacked the “threat” to bring the issue of Iran’s nuclear activity to the UN Security Council by the US, France, Britain and Germany.	Ahmadinejad is a citizen of Iran.	IE	YES
387	About two weeks before the trial started, I was in Shapiro’s office in Century City.	Shapiro works in Century City.	QA	YES
415	The drugs that slow down or halt Alzheimer’s disease work best the earlier you administer them.	Alzheimer’s disease is treated using drugs.	IR	YES
691	Arabic, for example, is used densely across North Africa and from the Eastern Mediterranean to the Philippines, as the key language of the Arab world and the primary vehicle of Islam.	Arabic is the primary language of the Philippines.	QA	NO