# Computational Linguistics Lab: Textual Entailment

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# Outline:

- (What we did not do last week for lack of time…)

  Wikipedia vs WordNet in NLP applications

  - Discussion of the paper: Ponzetto, S. P. Strube, M. ***Knowledge Derived FromWikipedia For Computing Semantic Relatedness***

- Reading group on TE:
  - A critical view of TE
  - Presentation of some TE systems that took part in last year RTE-5 challenge

# WordNet vs Wikipedia for NLP applications

- Discussion of the paper:
  - Ponzetto, S. P. Strube, M. ***Knowledge Derived FromWikipedia For Computing Semantic Relatedness***

***http://www.jair.org/media/2308/live-2308-3485-jair.pdf***

***Which are pros and cons?***

| WORDNET | WIKIPEDIA |
| --- | --- |
| | |
| | |
| | |
| | |

# Reading group on Textual Entailment:

- A critical view of Textual Entailment
  - A.Zaenen, L. Karttunen, R. Crouch, *Local Textual Inference: can it be defined or circumscribed?*

- Let's compare three different approaches that took part in last year challenge(RTE-5):
  - An Inference-Based Approach to Recognizing Entailment
    *P. Clark, P. Harrison (Boeing Company, Seattle, USA)*
  - A Joint Syntactic-Semantic Representation for Recognizing Textual Relatedness
    *R. Wang, Y. Zhang, G. Neumann (DFKI Saarbruecken, Germany)*
  - EDITS: An Open Source Framework for Recognizing Textual Entailment
    *Y. Mehdad, M. Negri, E. Cabrio, M. Kouylekov, B. Magnini (FBK-Irst, Trento, Italy)*

# Details of the entailment strategy:

- Preprocessing
  - Multiple levels of lexical pre-processing
  - Syntactic Parsing
  - Shallow semantic parsing
  - Annotating semantic phenomena
- Representation
  - Bag of words, n-grams through tree/graphs based representation
  - Logical representations
- Knowledge source
  - Syntactic mapping rules
  - Lexical Resources
  - Semantic phenomena specific modules
  - RTE specific knowledge source
  - Additional Corpora/Web resources
- Control Strategy and Decision Making
  - Pass/iterative processing
  - Strict vs. parameter based
- Justification
  - What can be said about the decision?

# The case of the inference-based approach (Clark et al. 2009)

- Preprocessing
  - …
- Representation
  - ….
- Knowledge source
  - …
- Control Strategy and Decision Making
  - …
  - …
- Justification
  - …

# The case of binary classification approach (Wang et al. 2009)

- Preprocessing
  - …
- Representation
  - ….
- Knowledge source
  - …
- Control Strategy and Decision Making
  - …
  - …
- Justification
  - …

# The EDITS system:

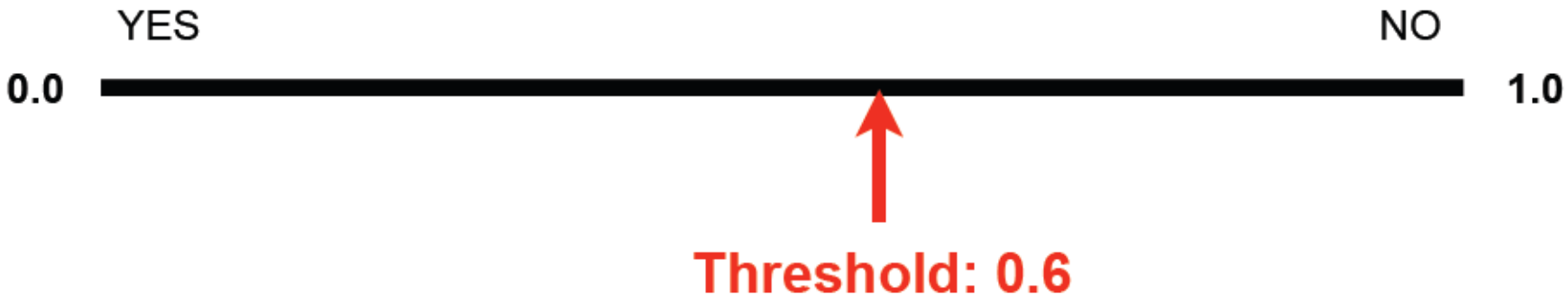
- EDITS (Edit DIstance Textual entailment Suite) is a general purpose Recognizing Textual Entailment (RTE) framework (Kouylekov, Negri 2010).

- Main Features:
  - Open Source Distribution (JAVA) – LGLP: http://edits.fbk.eu/
  - Language Independent
  - Configurability - configuration file & shell options
  - Extendability - interfaces for all modules (plugins)
  - Reads and Outpus the RTE entailment corpus format
  - Task adaptability (optimize on different dimensions)

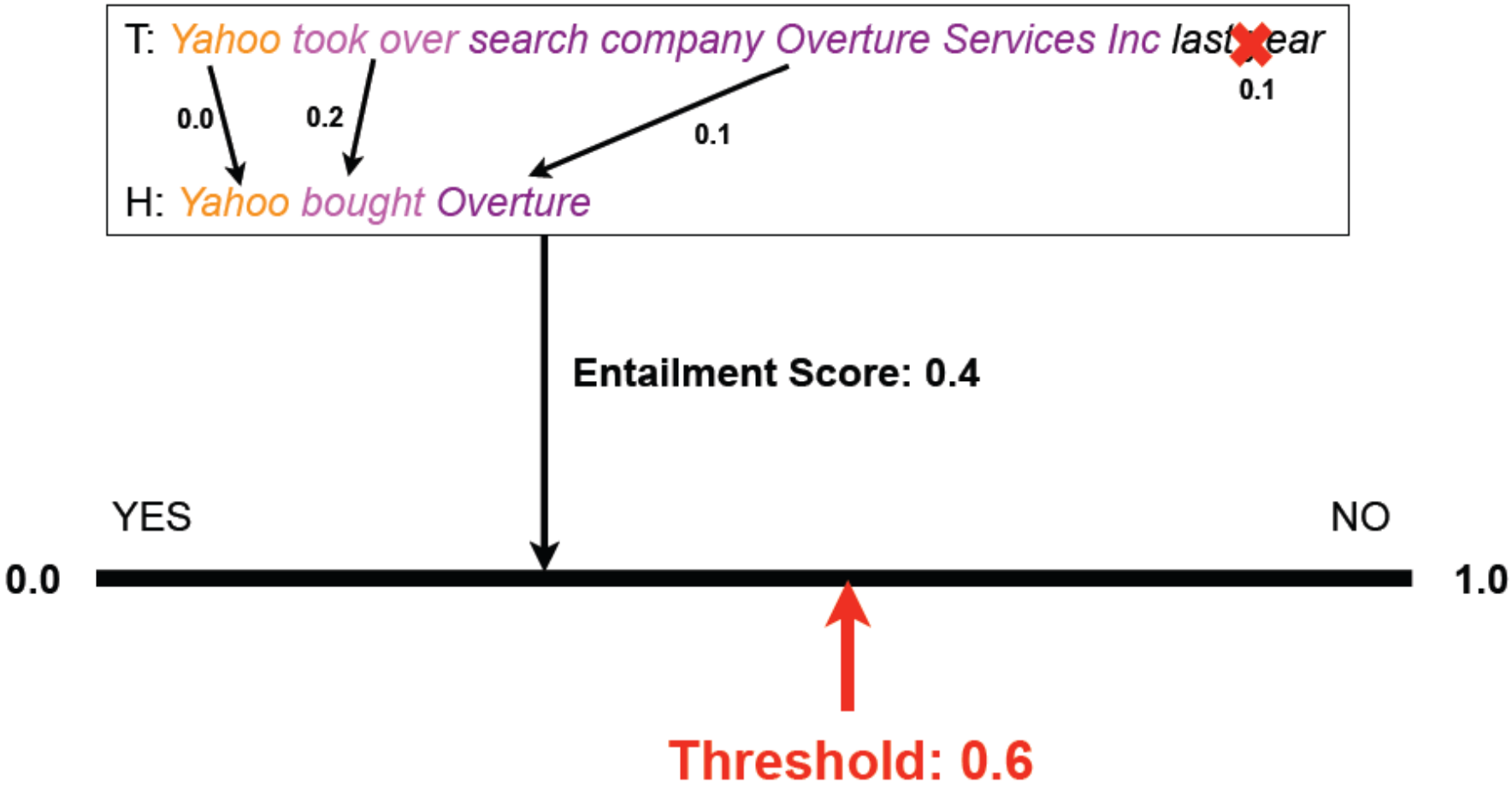
# Edit Distance approach:

T: *Yahoo took over search company Overture Services Inc last year*

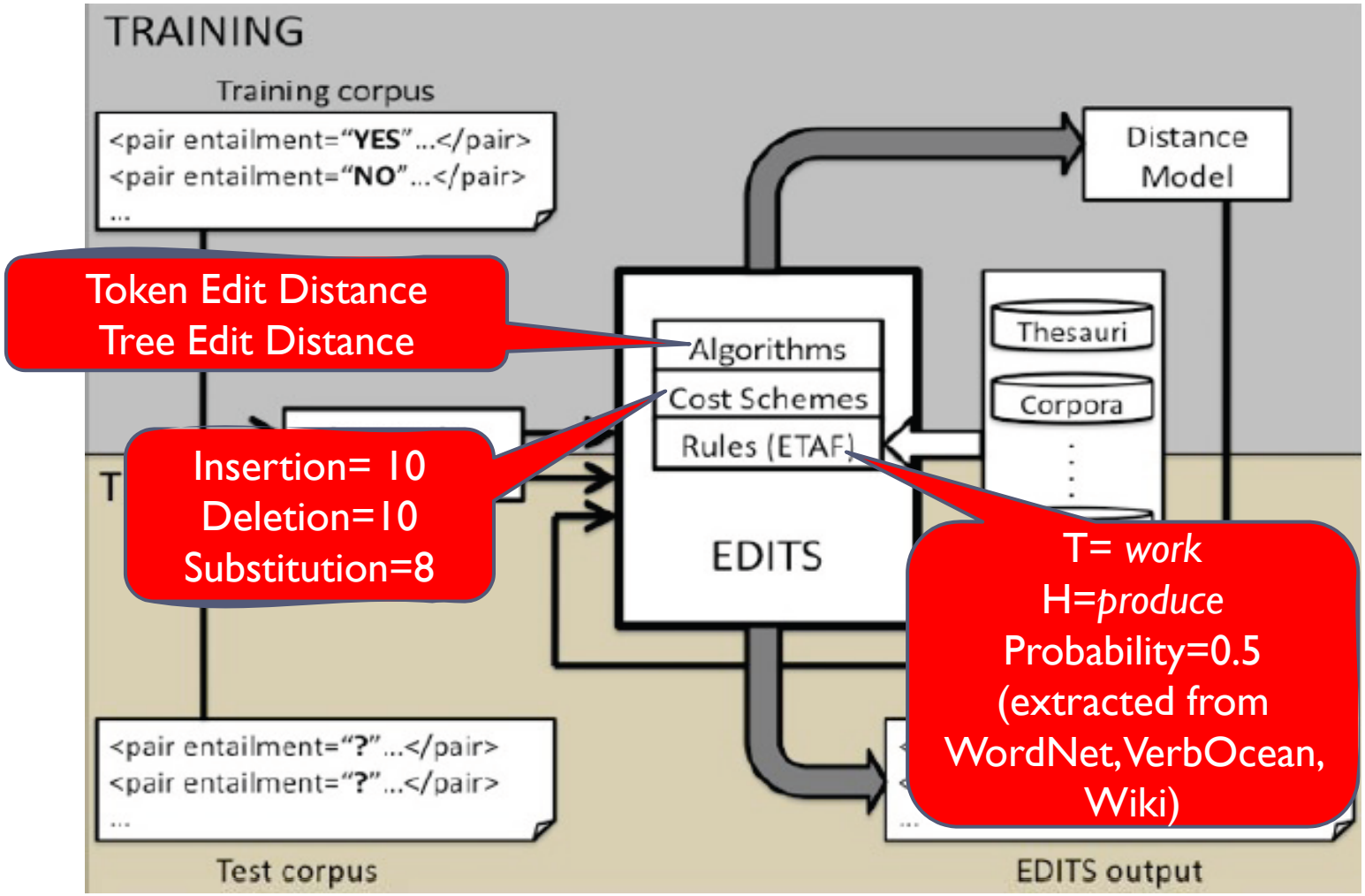
H: *Yahoo bought Overture*



# Edit Distance approach:



# EDITS architecture:



# The case of the distance-based system (Mehdad et al. 2009)

- Preprocessing
  - …
- Representation
  - ….
- Knowledge source
  - …
- Control Strategy and Decision Making
  - …
  - …
- Justification
  - …

# BIBLIOGRAPHY:


- Clark P., Harrison P., *An Inference-Based Approach to Recognizing Entailment*, Proceedings of the Text Analysis Conference (TAC 2009), Gaithersburg, Maryland, USA.
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