

Computational Logics, Semantics and Pragmatics: Semantic Interpretation

German Rigau <german.rigau@ehu.eus>

Javier Alvez <javier.alvez@ehu.eus>

Mikel Iruskieta <mikel.iruskieta@ehu.eus>



HiTZ

Hizkuntza Teknologiako Zentroa
Basque Center for Language Technology

Motivation

Sbdu ip im vdu yonrckblms.

Abf ip im vdu bhhigu.

Sbdu yigaus ly vdu hbbvfnoo.

Abf zumv vb vdu aivgdum.

Mduku ip vdu hbbvfnoo? **A:yonrckblms**

Mduku znp Abf fuhbku vdu aivgdum? **A:bhhigu**

Motivation

John is in the playground.

Bob is in the office.

John picked up the football.

Bob went to the kitchen.

Where is the football? **A:playground**

Where was Bob before the kitchen? **A:office**

Motivation

派對

Motivation

दावत

Motivation

ವಿನ್ಯೋದ ಕೂಟ

Motivation

party

Motivation

party

- Which sense of “party”?
- How many senses have “party”?
- How a computer should represent these senses?
- How these senses combine to form phrases?
- How phrases combine?

Motivation

- For example:
 - The lexical-semantic knowledge allows us to better **characterize** the different meanings of the words
 - *In 1992 Perot tried to organize a third **party** at the national level*
 - *She joined the **party** after dinner*
 - *They organized a **party** to search for food*
 - *He planned a **party** to celebrate Bastille Day*
 - *The **party** of the first part*

Motivation

- This better characterization may consist of:
- Add domain tags to each word sense
 - party_n¹: politics
 - party_n⁴: free-time
- Distinguish the semantic relations that apply to each concept
 - party_n¹: member of: political_system_n¹
 - party_n⁴: hyponym: wedding_n¹
- Lexical Knowledge Bases, Ontologies, word embeddings, pre-trained language models?

Content

1) Introduction to semantics and computational pragmatics

- German Rigau @ HiTZ <german.rigau@ehu.eus>
- 6/04, 11/04

2) Introduction to logical formalisms and logic programming

- Javier Alvez @ LOREA <javier.alvez@ehu.eus>
- 13/04, 27/04, 2/05, 5/05, 9/05

3) Computational Semantics: Semantic Interpretation

- German Rigau @ HiTZ <german.rigau@ehu.eus>
- 10/05, 12/05, 16/05, 17/05

4) Computational Pragmatics and Discourse

- Mikel Iruskieta @ HiTZ <mikel.iruskieta@ehu.eus>
- 19/05, 15/05, 26/05

Bibliography

- Blackburn, Patrick, and Johan Bos.
[Representation and inference for natural language.](#) A first course in computational semantics. CSLI (2005).
- Blackburn, Patrick, and Johan Bos.
[Working with Discourse Representation Theory.](#) An Advanced Course in Computational Semantics . CSLI (2005).
- Patrick Blackburn, Johan Bos, Kristina Striegnitz
[Learn Prolog Now!](#)

Evaluation

1) Introduction to logical formalisms and logic programming

- Javier Alvez @ LOREA
- Teacher exercises 30%

2) Computational Semantics: Semantic Interpretation

- German Rigau @ HiTZ
- Teacher exercises 40%

3) Computational Pragmatics and Discourse

- Mikel Iruskieta @ HiTZ
- Teacher exercises 30%

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