

VerbNet overview, extensions, mappings and applications

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Abstract:

The goal of this tutorial is to introduce and discuss VerbNet, a broad coverage verb lexicon freely available on-line. VerbNet contains explicit syntactic and semantic information for classes of verbs and has mappings to several other widely-used lexical resources, including WordNet, PropBank, and FrameNet. Since its first release in 2005 VerbNet is being used by a large number of researchers as a means of characterizing verbs and verb classes.

The first part of the tutorial will include an overview of the original Levin verb classification; introduce the main VerbNet components, such as thematic roles and syntactic and semantic representations, and present a comparison with other available lexical resources.

During the second part of the tutorial, we will explore VerbNet extensions (how new classes were derived and created through manual and semi-automatic processes), and we will present on-going work on automatic acquisition of Levin-style classes in corpora. The latter is useful for domain-adaptation and tuning of VerbNet for real-world applications which require this.

The last part of the tutorial will be devoted to discussing the current status of VerbNet; including recent work mapping to other lexical resources, such as PropBank, FrameNet, WordNet, OntoNotes sense groupings, and the Omega ontology. We will also present changes designed to regularize the syntactic frames and to make the naming conventions more transparent and user friendly. Finally, we will describe some applications in which VerbNet has been used.

Tutorial Outline:

VerbNet overview:

- Original Levin classes
- VerbNet components (roles, syntactic and semantic descriptions)
- Related work in lexical resources

VerbNet extensions:

- Manual and semi-automatic extension of VerbNet with new classes
- On-going work on automatic acquisition of Levin-style classes in corpora

VerbNet mappings and applications:

- Mappings to other resources (PropBank, FrameNet, WordNet, OntoNotes sense groupings, Omega ontology)
- Current status of VerbNet
- Ongoing improvements
- VerbNet applications

Short biographical description of the presenters:

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Karin Kipper Schuler received her PhD from the Computer Science Department of the University of Pennsylvania. Her primary research is aimed at the development and evaluation of large-scale computational lexical resources. During the past couple of years she worked for the Mayo Clinic where she was involved in applications related to bio/medical informatics including automatic extraction of named entities and relations from clinical data and development of knowledge models to guide this data extraction.

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Anna Korhonen received her PhD from the Computer Laboratory of the University of Cambridge in the UK. Her research focuses mainly on automatic acquisition of lexical information from texts. She has developed techniques and tools for automatic lexical acquisition for English and other languages, and has used them to acquire large lexical resources, extend manually built resources, and help NLP application tasks (e.g. parsing, word sense disambiguation, information extraction). She has applied the techniques to different domains (e.g. biomedical) and has also used them to advance on research in related fields (e.g. cognitive sciences).

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Susan Brown is currently a PhD student in Linguistics and Cognitive Science at the University of Colorado under Dr. Martha Palmer's supervision. Susan's research focuses on lexical ambiguity, especially as it pertains to natural language processing tasks. Her research methodologies include psycholinguistic experimentation, corpus study, and annotation analysis. She has also been involved in the development of large-scale lexical resources and the design and construction of a lexically based ontology.