Using Meaning Aspects for
Word Sense Disambiguation

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ABSTRACT

In this paper, we describe the successful application of our approach to text sense representation in the area of word sense disambiguation. After an introduction to our underlying theory and after briefly describing our basic data structures and operations, we present our experimental results on the Senseval-3 English Lexical Sample task - compared to the somewhat lesser impressive results we achieved by using traditional word vector based data.

We hope that our work will eventually enable unified ways of achieving better results for certain text processing tasks in general.

1. INTRODUCTION

Word Sense Disambiguation (WSD) can be regarded as vital stepping stone for advanced text processing applications such as machine translation, semantic web search, automatic summarization and many more. By the term Word Sense Disambiguation, we mean the selection of a particular sense out of a set of sense definitions, according to the "calculated" meaning of a particular word within a short text fragment taken from a larger corpus.

Up to date there is a great variety of approaches to basic WSD problems, most of which use lexicosyntactic or vector space based methods (usually augmented by techniques related to dictionaries or ontologies). The majority of these methods require manually prepared training data in order to produce results of acceptable quality but there are some non-supervised approaches as well.

Even though great efforts were invested in WSD research, results are in general far from being perfect (best precision nowadays is around 70% for supervised systems, non-supervised systems usually are much worse (Mihalcea et al. 2004).