

# Context Expansion with Global Keywords for a Conceptual Density-Based WSD

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**Abstract.** The resolution of the lexical ambiguity, which is commonly referred to as Word Sense Disambiguation, is still an open problem in the field of Natural Language Processing. An approach to Word Sense Disambiguation based on Conceptual Density, a measure of the correlation between concepts, obtained good results with small context windows. This paper presents a method to integrate global knowledge, expressed as global keywords, in this approach. Global keywords are extracted from documents using a model based on term frequency and distribution. Preliminary results show that a slight improvement in recall can be obtained over the base system.

## 1 Introduction

The resolution of lexical ambiguity that appears when a given word in a context has several different meanings is commonly referred to as Word Sense Disambiguation (WSD). Supervised approaches to WSD usually perform better than unsupervised ones [4]. However, such approaches are afflicted by the lack of large, semantically annotated corpora. The unsupervised approach to WSD based on *Conceptual Density* and the frequency of WordNet senses [5] is an unsupervised approach which obtained good results, in terms of precision, for the disambiguation of nouns over SemCor (81.55% with a context window of only two nouns, compared with the MFU-baseline of 75.55%), and in the Senseval-3 all-words task (73.40%, compared with the MFU-baseline of 69.08%) as the CIAOSENSE-2 system [2].

Our approach obtained the above results with a context window of only two nouns, one before and one after the noun to disambiguate, exploiting the relationship existing between adjacent words. The obtained results [5] show that a larger context deteriorates the performance of the approach. We suppose that such decrease is due to the fact that distant words have little or no meaning for