

Named entity recognition in speech

Overview

We propose a new approach to improve named entity recognition (NER) in broadcast news speech data and to identify names and their entity class that were missed by the transcriber. NER regards the identification of person, organization and location names.

In depth description

The approach proceeds in two key steps: (1) we automatically detect document alignments between highly similar speech documents and corresponding written news stories that are easily obtainable from the Web; (2) we employ term expansion techniques commonly used in information retrieval to recover named entities that were initially missed by the speech transcriber. We show that our method is able to find named entities missing in the transcribed speech data, and additionally to correct incorrectly assigned named entity tags. Consequently, our novel approach improves state-of-the-art NER results from speech data both in terms of recall and precision. An F1 measure close to 60% is obtained compared to a 55% F1 using a state-of-the-art approach.

Potential fields of application

This technology can be included as a part of a media search engine. It provides improved indexing of speech transcripts that contain unknown names.

Possibilities for exploitation

We will exploit the technology in new research projects where noisy speech transcripts are corrected or expanded with information (beyond named entities) to be expected from the context of the search.

Further information

Further technical information is available in Shrestha, N., Vulić, I. & Moens, M.-F. (2013). An IR-Inspired Approach to Recovering Named Entity Tags in Broadcast News. In *Proceedings of the 6th IRF Conference for Science and Industry (Lecture Notes in Computer Science 8201)* (pp. 45-57). Springer.

Contact person

Prof. Marie-Francine Moens
Department of Computer Science
Celestijnenlaan 200A
B-3001 Heverlee, BELGIUM
sien.moens@cs.kuleuven.be