

3.5 Keyword Spotting for Searching and Indexing Spoken Documents

Keywords

Speech processing; keyword spotting;
data mining; information retrieval

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Corporate Sponsorship Program

See Section 4 of the present document

File reference & version number:

Software disclosure 11639

Functional description

Idiap offers solutions to search and index spoken documents (audio/multimedia archives) through keyword spotting (KWS) technology. The solutions support both text-based query input and query-by-example input i.e. spoken query. The KWS systems are in-parts or fully based on state-of-the-art automatic speech recognition technology. Consequently, Idiap can provide customized solutions of keyword spotting systems for different languages and domains.

Innovative aspects

- Neural network based acoustic modeling, technology allowing for speaker/channel/sentence-based adaptation
- Support of several speech transmission channels (landline telephone, mobile phone and voice over IP)
- Several times faster than real-time solution, enabling search in very large audio archives
- Robust solutions also with noisy recordings
- Unified framework for text query-based KWS and query-by-example based KWS

Commercial application examples

- Search for specific information in large audio archives
- Audio content data-mining and indexing

More information

Motlicek, Petr, Valente, Fabio and Szoke, Igor, “Improving Acoustic Based Keyword Spotting Using LVCSR Lattices”, *Proceedings on IEEE International Conference on Acoustics, Speech and Signal Processing*, pp. 4413-4416, Japan, 2012.

Software & IPR status

Most of the underlying software is open source. Some databases associated with certain languages may require separate agreements.

The Idiap spin-off AudioSearch SARL is commercializing a part of the keyword spotting technology.