3.5 Keyword Spotting for Searching and Indexing Spoken Documents

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Speech processing; keyword spotting; data mining; information retrieval

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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

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.