

# A search engine for TV programs

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The journalist recalls more or less what Ulla Schmidt said regarding the health reform, but needs the exact wording to be able to cite her. A new speech recognition system helps to search TV broadcasts. It does not need to be updated and so does not entail any running costs.

When was the financial crisis first mentioned in the news? What was it that Angela Merkel said concerning the presidential elections? Until now, journalists, archivists and media observers have had to search painstakingly to find a specific section in a TV recording - or have had to invest heaps of money in speech recognition software.

The systems currently available to take over the search have to be regularly updated by specialists and therefore entail high running costs. These systems are based on a kind of thesaurus containing all the words they can recognize. However, new topics and personalities bring along new words like "financial crisis" or names such as "Obama". These terms need to be transferred to the thesaurus so that they can be found.

Researchers at the Fraunhofer Institute for Intelligent Analysis and Information Systems IAIS in Sankt Augustin have developed a [speech recognition](#) system that does not require expensive updating measures. "Our system is based on a syllable thesaurus instead of a word thesaurus. Conventional speech recognizers can only discern a limited number of words, while the total number of words in existence is too vast to handle. The number of existing syllables, on the other hand, is manageable. With about 10,000 stored syllables we can make up any word," says IAIS scientist Daniel Schneider. The program can even acquire new words

independently by composing them from the stored syllables: fi-nan-cial cri-sis. It does not need to be updated and so does not entail any running costs.

For each search, the programs are first of all split into segments. Whenever a new speaker starts to talk or a film contribution begins - in which case the content of the audio track changes - the program saves the following scene as a new segment. The user can then navigate from speaker to speaker, and can choose to watch only the contributions of one particular interview partner. In a second step, the individual words are analyzed by speech algorithms.

Users can apply the program just like a conventional search engine. You simply enter the search term, and a few milliseconds later the program has scanned 10,000 hours of processed data. Just like an Internet search engine, it displays the results in context in their given sentences. The user then simply clicks on a word to play back the relevant section of film material. The system can find over 85 percent of the spoken words in a program, and 99 out of a 100 located contributions are correct. A license model of the program is already available.

Source: Fraunhofer-Gesellschaft ([news](#) : [web](#))

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