



# SPEECH PROCESSING GROUP (SPEECHLAB)

## Main objectives and activities of the laboratory

- theoretical and applied research in the field of digital processing and speech signal recognition,
- research, development and design of speech recognition systems,
- knowledge transfer to commercial sphere (several products have been already successfully commercialized),
- expertise in speech and speaker recognition, and in automatic Slavic language processing.

## Professional focus of the laboratory

- state-of-the-art approaches speech processing and recognition,
- development of complex multi-lingual speech recognition systems,
- analysis of speech signals,
- machine learning applied to the training of acoustic and language models,
- speech technology applied in various fields, such as voice dictation, automatic broadcast monitoring and transcription, voice operated man-machine interaction, voice operated tools for motor handicapped people,
- speech segmentation and speaker recognition,
- text corpus processing and analysis.

## Specific equipment

- Matlab, MS Visual Studio, Python, Perl, Java, Lua programming environment,
- in-house speech recognition toolkit,
- sets of microphones with various different characteristics, multichannel sound cards,
- computational cluster, powerful graphic cards for neural network training.

## Offered technologies and expertise

- design of speech recognition systems,
- optimization of algorithms for real-time speech processing and recognition,
- efficient adaptation of speech recognition systems to new languages (currently we offer modules for 15 European languages),
- design, training and testing of deep neural networks,
- implementation of classification methods.



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