

The aim of this thesis is to provide a comprehensive introduction to digital sound processing and speech recognition.

Selected speech recognition features as well as algorithms are introduced and utilized in a voice controlled text editor and a .NET class library.

The performance of the features is evaluated in both speaker-dependent and speaker-independent recognition of commands related to text editing.

The library provides a straightforward way of implementing a speaker-dependent, domain-constrained voice recognition in an arbitrary application. It is used in a simple voice controlled text editor.

The editor allows the user to assign voice commands to built-in actions. In this way, it is possible for inexperienced users to access and use advanced features of the program without having to learn complex workflows. Moreover, this approach is language-agnostic and can even be used by people with speech impairments as opposed to majority of presently used voice recognition systems.

The results of the experiments indicate that, given a recording of sufficient quality, the presented features and algorithms provide an effective means to implement a speaker-dependent speech recognition system, which can be used in a voice controlled text editor.