

CIRCUIT ANALYSIS APPLICATION INTERFACE BY USING SPEECH RECOGNITION TECHNOLOGY

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Abstract

Scientific and technological developments in the field of Speech Recognition (SR) provides great convenience to users in all areas of life also finds an important place in the field of education. Basically a SR system, first performs functions of receiving speech data and predicting it. Then the spoken words and expressions are converted into a processable form in the digital environment. Thus, users can manage devices with voice commands without using their hands. This technology can also be used to enable students who do not use their hand in engineering education to perform experiment in a classical laboratory environment. In this study, Electronics I Diode Characteristics is determined as a model experiment that is included in the curriculum of Faculty of Technology Electrics & Electronics department in Marmara University. Then, it is implemented by talking through the developed interface without using hands.

In the process of converting the speech to text through the developed interface, the Web Speech API (WSA) which is an open source platform supported by Google has been utilized. Adobe Flash program is used for the user interface design, .Net C# is used for necessary calculations during the experiment and to draw the waveforms' graphs. While students are conducting the experiment, all tasks can be performed by speaking: 1) run the application, 2) change the parameters, 3) monitor and observe the results.

Keywords: Circuit Analysis, Simulation, Speech Recognition, Google Web Speech API.