All You Need To Know About Synthesizers

Synthesizers are sound modifying and reproducing units. They can be either installed on a computer system or be physical like the classical synthesizers produced by Yamaha. Synthesizers help in modifying music to make it better, reproduce voice or analyze and come up with a completely different thing all together from the original.

There are 2 basic kinds of synthesizers: analog and digital. Many synthesis methods however exist which apply to both the above types of synthesizers. All these methods tend to be mathematically related for example, frequency modulation and phase modulation.
Some of these types are Subtractive synthesis, Additive synthesis, granular synthesis and wavetable synthesis.

The first true electronic musical synthesizer was invented by Relish Gray in 1876. While working at his telephone invention, Gray discovered that he could control sound from a self vibrating electromagnetic circuit and in doing so invented a basic single note oscillator. After this, synthesizers were controlled by early electronic analog computers and old electronic musical instruments. In 1950, RCA produced experimental devices to synthesize both voice and music. The giant Mark II Music Synthesizer could however synthesize only when it was programmed for a musical or voice performance.

Most modern synthesizers are however digital in nature. They are controlled by what is known as a digital signal processor or DSP. Some digital synthesizers are software that can modify sound using our daily computer machines.

The earliest digital synthesis was performed by software installed on huge main frame computers. Today, various complicated software exist that use the DSP technique to give you a taste of the real thing. They can even reproduce the classical analog synthesizers.

So how are synthesizers used? Well, in many ways. As modern technology evolved, uses have been found for synthesizers. Today synthesis is used to produce high quality music, movies and even voice packages. Groups as early as the Beatles used synthesis techniques in their work. They were followed by the hugely popular Pink Floyd.

Synthesizers are today used also to produce human simulated speech for call centers and multinational companies. People with visual impairments use this technology through a text to speech software that gives them access to modern computers making them independent. Dictation software like the Dragon naturally speaking also uses speech synthesis.

So how do synthesizers reproduce human voice? Voice synthesis is a fascinating topic. A recorded sample of a human voice can be modified so that it is completely different from the original. The sample can be used to generate codes that can be fed into a computer system to give it a voice. In movies, voice modification is done through digital synthesizers to give new and astounding speech to sci fi characters.

Synthesizers are a part of us today. They help us in every aspect of our lives. Starting from your washing machine to the latest robotics every one uses some form of synthesis with the help of digital synthesizing software. Musical instruments can be reproduced on your personal computer allowing you to become the next great artist without even learning to play. They can simulate and reproduce human voice allowing for great software like screen readers, speech recognition and other new and amazing packages.

Source: http://www.articlecircle.com

About the Author

S. Stammberger is the editor of Keyboard Center. A resource center and shopping guide for keyboards and synthesizers.
http://www.keyboardcenter.info