

The thesis describes generation of time-frequency-intensity graphs (spectrograms) of audio recordings using the Fourier transform. The theoretical possibilities and limitations of spectrogram synthesis (audio reconstruction of a given spectrogram) are discussed and two practical synthesis methods are described, based on reconstruction using pure tones and random noise. Spectrogram generation and both described synthesis methods are implemented in the form of a computer program with a graphical user interface, allowing straightforward configuration of relevant parameters.