

# Acoustic fingerprinting

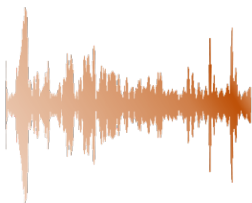
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# What is an acoustic fingerprint?

- Short summary of an audio object using a limited number of bits



Audio signal



Digital fingerprint

# Why fingerprint?

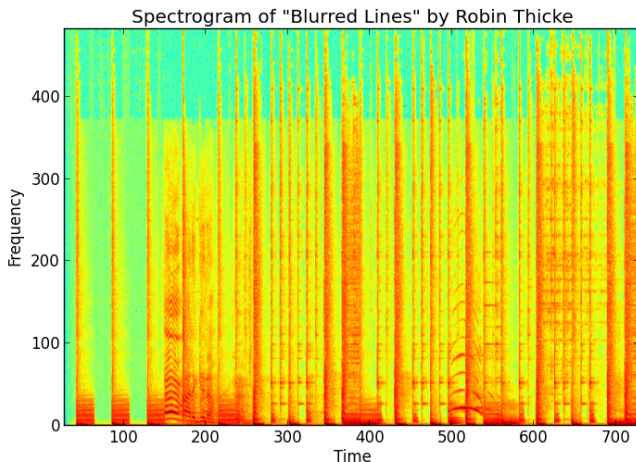
- Efficient mechanism to establish the perceptual equality of two audio objects
- Advantages
  - Reduced memory/storage requirements
  - Efficient comparison
  - Efficient search

# Example Systems

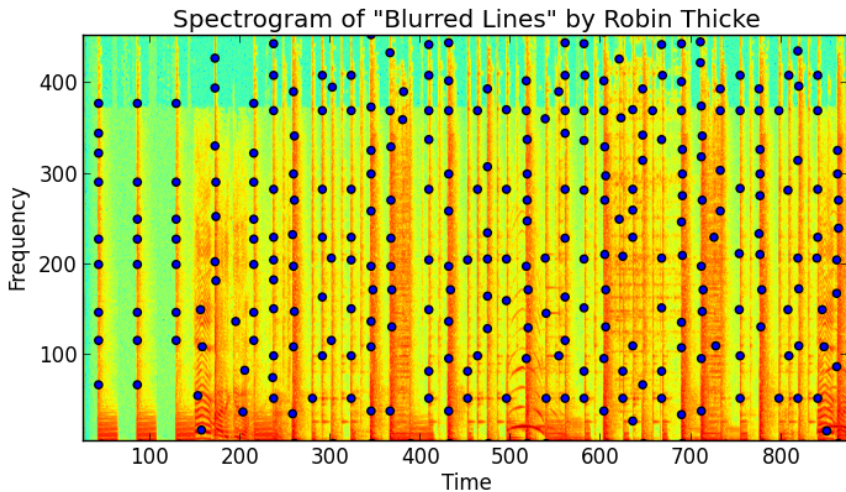
- Shazam
- SoundHound
- Google
- Chromaprint
- Echoprint

# Spectrograms

- Repeatedly use an Fast Fourier Transform (FFT) over small windows of time in samples to create a spectrogram



# Peak Finding



# Fingerprint hashing

- Audio fingerprinting is hashing of audio spectrogram peaks

