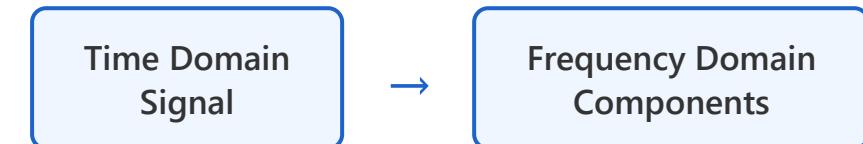


Audio Feature Extraction: FFT & Spectrogram



Fast Fourier Transform (FFT)

Frequency Domain Transformation



Reveals frequency components present in audio signal



Spectrogram

Visual representation of frequency spectrum over time

Temporal Info

Time

Spectral Info

Frequency

STFT (Short-Time Fourier Transform): Applies FFT to windowed segments



Essential Applications



Audio Analysis



Speech Recognition



Music Processing



Trade-off

Between time and frequency resolution (determined by window size)