Audio Signal Processing for Machine Learning

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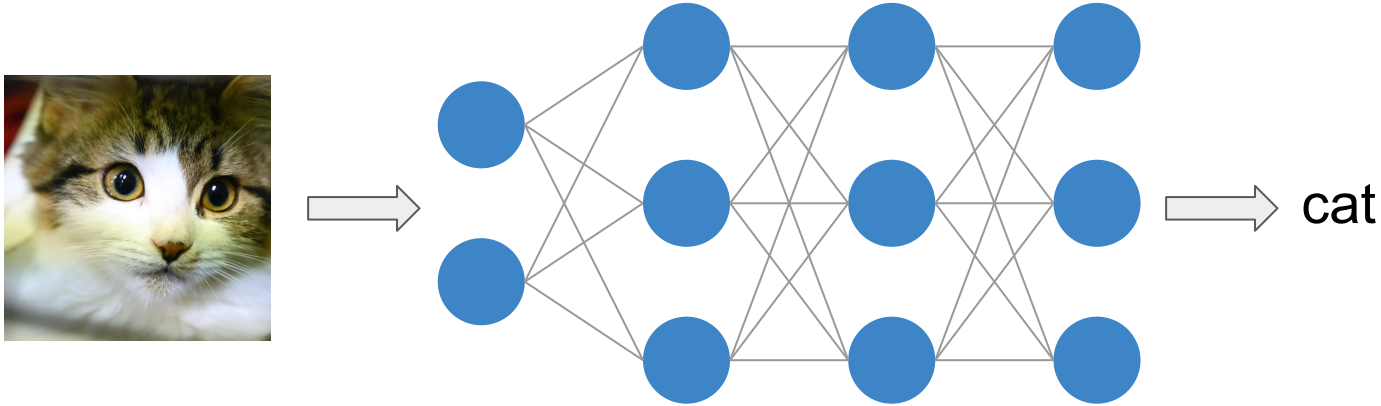
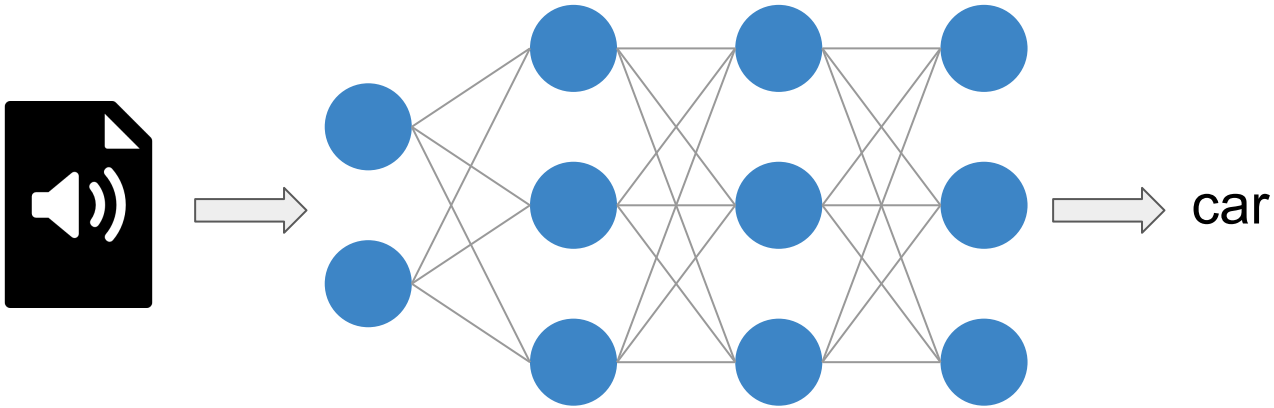
Problem



Problem



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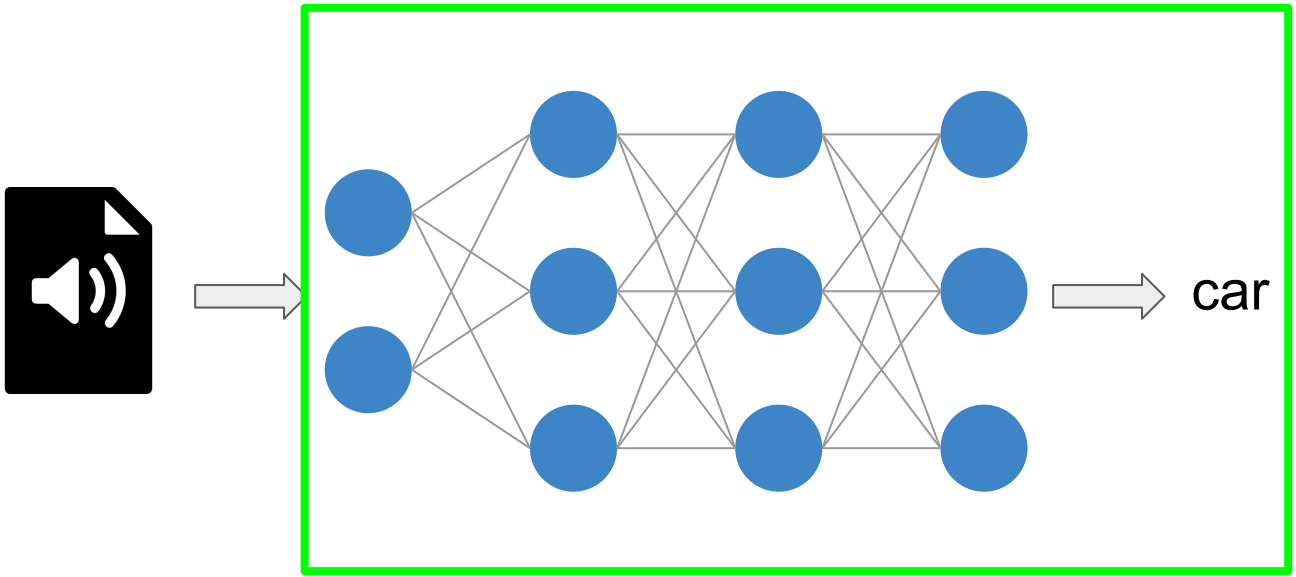

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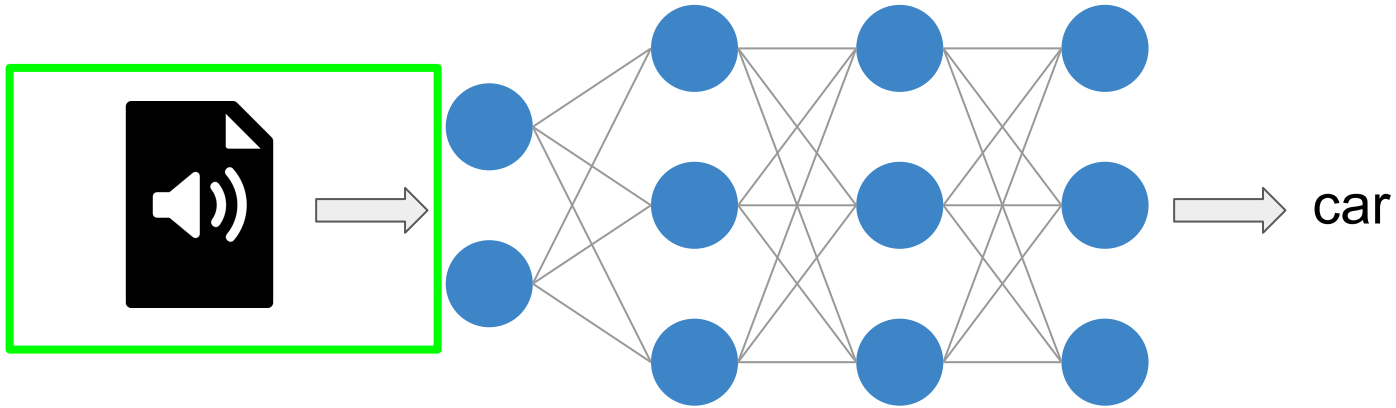


Applications

- Audio classification
- Speech recognition / speaker verification
- Audio denoising / audio upsampling
- Music Information Retrieval
  - Music Instrument Classification
  - Mood Classification
  - …
- ...

Content

- Sound waves
- DAC / ADC Analog-Digital Conversion
- Time- and frequency-domain audio features (e.g., rms, spectral centroid)
- Audio transformations
  - Fourier Transform / STFT
  - Constant-Q Transform
  - Mel Spectrograms
  - Chromograms
- ...

What should you expect?

- Theory
- Coding tutorials

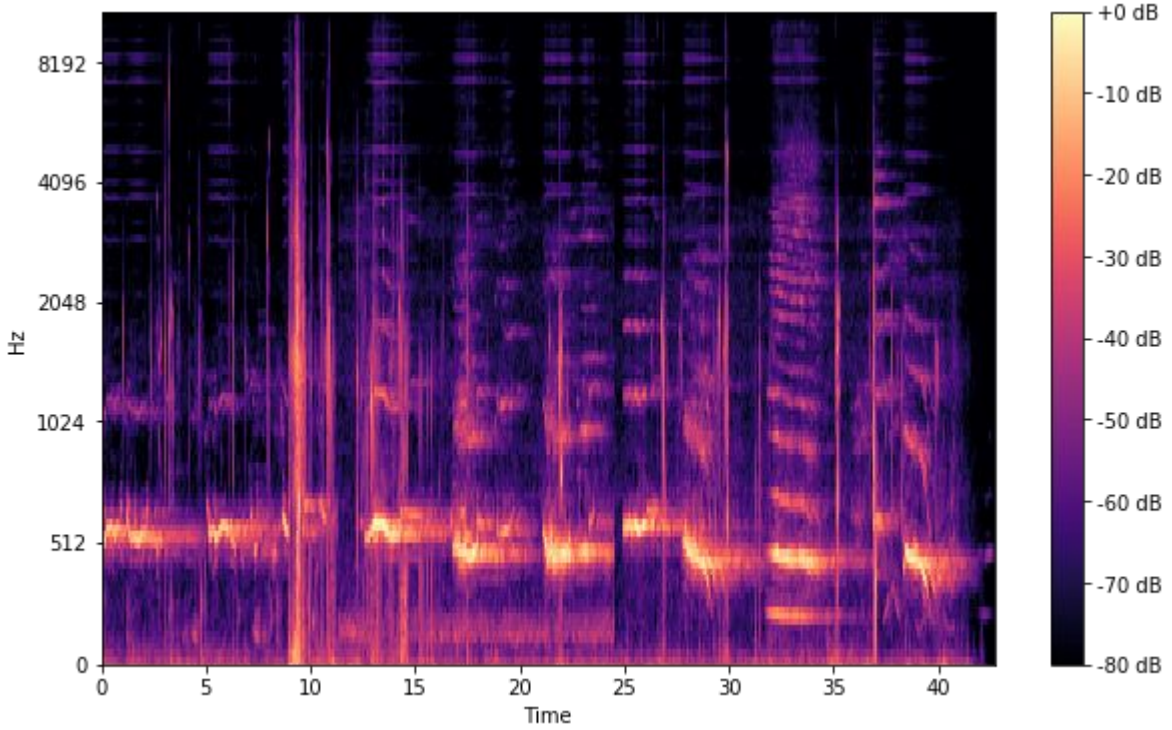
Where do you I get the code/slides?

Technology stack

What you'll learn

- Get a deep understanding of audio data
- Familiarise with frequency/time-domain audio features
- Extract features from raw audio
- Recognise what audio features to use for ML applications
- Preprocess audio data for ML
- Understand (some!) math behind audio transformations
- Use *librosa* for your audio projects

Don’t freak out!



Who’s this series for?

- ML/DL engineers
- Computer science students
- Software engineers
- Music technologists
- Tech-oriented musicians

Prerequisites

- Intermediate Python programming

Join the community!

thesoundofai.slack.com