



DIPARTIMENTO  
DI INGEGNERIA  
DELL'INFORMAZIONE

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**800**  
ANNI



UNIVERSITÀ  
DEGLI STUDI  
DI PADOVA

# Project proposals

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# Music Genre Recognition

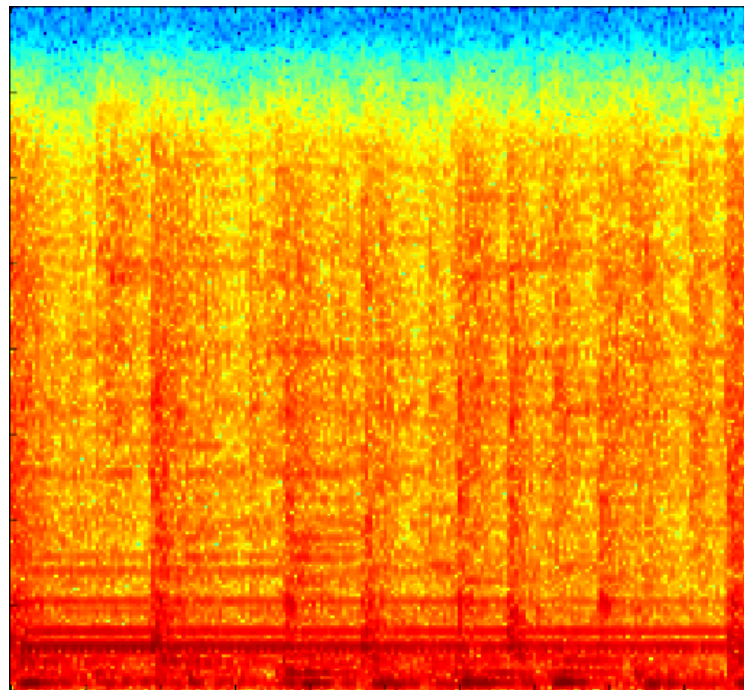
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- **Reference paper:** Zhang et. al. “Improved Music Genre Classification with Convolutional Neural Networks”, Interspeech 2016.

# Music Genre Recognition

Audio signals are a very peculiar data-type since they can equivalently be represented in 1D and 2D formats.

Try to solve the music genre classification task using advanced CNN architectures and try to see if the networks can acquire the same information from the two different formats.



# Dataset

## **Dataset:**

Free Music Archive <https://github.com/mdeff/fma>.

Contains approximately 100000 tracks from 16000 artists arranged in a hierarchical taxonomy of music genres.

The github repo also provides the code to load and process the data.



# Music Genre Recognition

1. Implement the baselines
  - a) 1D-CNN that processes audio alone
  - b) 2D-CNN that processes the spectrogram.
2. Try to propose or implement some improvements to increase the performance of the model. One possible way to do so could be to merge together information from the standard audio and the spectrogram and to verify the contribution to the classification of the two inputs.