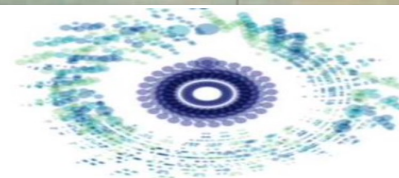# Music Visualization
Using Deep Learning

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Project Objective

- This project aims to create a visual representation of music, that is both informative and aesthetically pleasing using Artificial Intelligence methods such as Deep Learning.
- The approach undertaken showcases an **abstract representation** of music in **static form.**
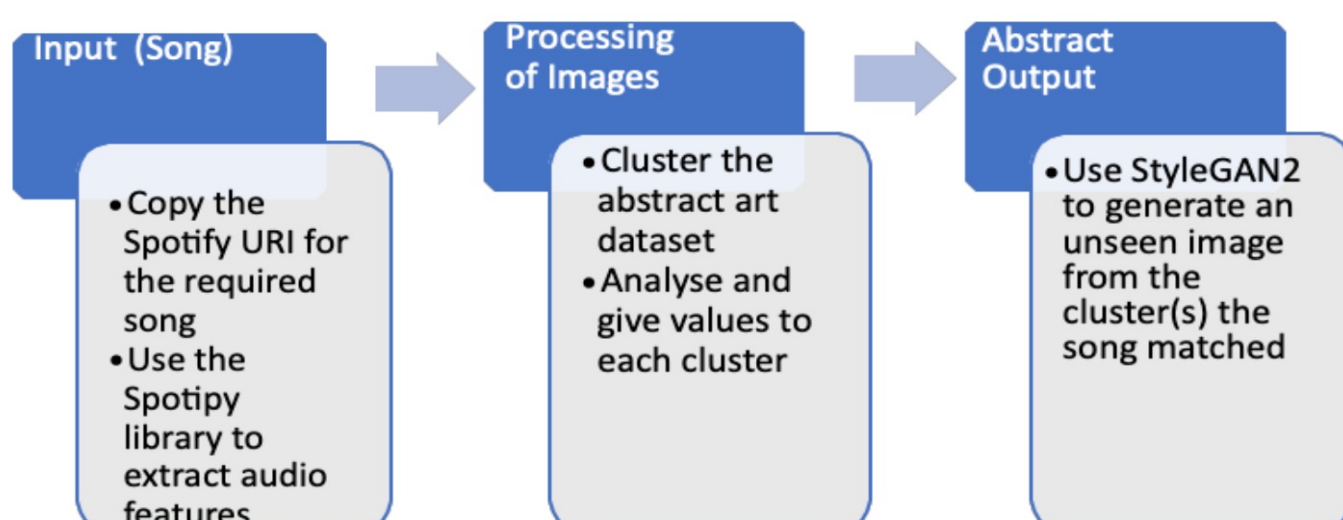- Kandinsky's paintings are an example of abstract unstructured visualizations of music.

Visualizations Produced for Different Genres

Approach

The Spotify song's energy, tempo and mode are processed. This acts as a deciding factor for analyzing the sentiment of the song which corresponds to the brightness, colours present, number of colours and saturation of the picture.

Input (Song)
- Copy the Spotify URI for the required song
- Use the Spotipy library to extract audio features

Processing of Images
- Cluster the abstract art dataset
- Analyse and give values to each cluster

Abstract Output
- Use StyleGAN2 to generate an unseen image from the cluster(s) the song matched

Conclusion

- The user study helped verify that **songs that are similar** in mood, tempo and rhythm **produced similar outputs and vice versa**.
- It was concluded that different genres do not necessarily produce vastly different images, rather they produce **images solely based on sentiment rather than the genre** itself.