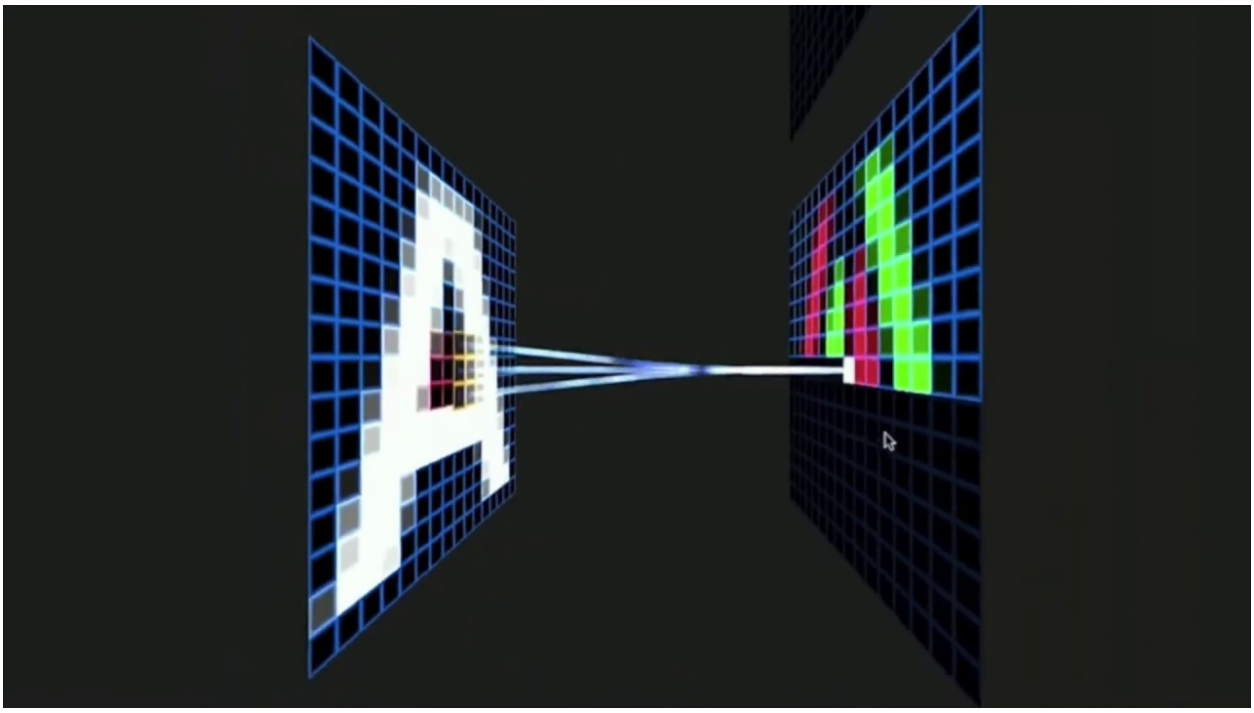
Predicting Music Genre from Images

A Case Study by Adam Kippenhan, 2022



Prompt: You have just been hired as a data scientist for one of today's most popular musical artists, the Quartiles! They want to create a new album and want to see if there is some way that data science can help them to make the album more popular and choose what genre they will make it (They do like to spread out!). They want to focus primarily on the album art. The six different genres they have decided they want to choose from are: alternative, country, hip-hop, jazz, pop and rock. Using your data science skills, you have collected some example album art images from these different genres and developed a convolutional neural network machine learning model that can make predictions on what genre an album art image correlates to. This method works fairly well, but you were not satisfied with the results and looked for ways that you could improve the model. Aha! What if you could change the images given to the model to make it better at predicting a genre?

Deliverable: You have narrowed down your methods into three different techniques for image manipulation: **flipping**, **grayscaling** and **brightness adjustment**. Your task is to determine if any of these methods increase the convolutional neural network model's accuracy at predicting the genre or if the original images work the best. Then choose which genre you believe the Quartiles should select for their new album based on your findings. All the relevant data and code required to complete this project is available in a GitHub repository which you can clone/fork: https://github.com/akippenhan749/CaseStudyPredictingMusicGenre. For more details on the requirements for this project, see the rubric (assignmentRubric.pdf).