

# JoyScore

The Next Generation of Content Suggestion  
Using VisionAI API

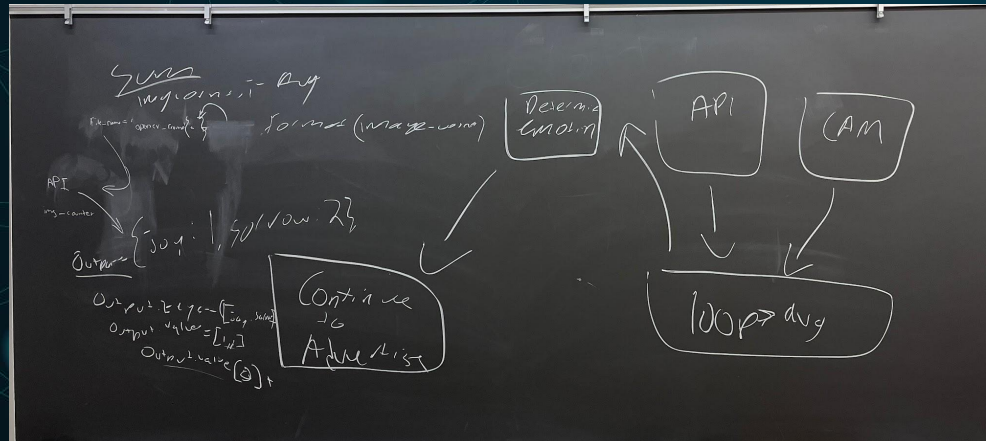
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# Functionality

- JoyScore is a web application that integrates Google Cloud's VisionAI API to analyze a user's emotions using real time images from a computer webcam as a user watches a youtube video
- JoyScore uses an algorithm to establish a sentiment score for a set of images based on the likelihoods of an emotion given from the VisionAI API
- The sentiment score reflects the user's enjoyment while viewing the content based on their facial expressions.
- Thus, the program can aid the youtube recommendation algorithm by suggesting more personalized videos

# Planning Process



Our classroom  
blackboards are a  
representation of the  
thoughtful planning and  
decision making that went  
into the project.

**01** **VisionAI API**  
Access API and create a method that pushes local files into the facial emotion detector

**02** **Intervalled Pictures**  
Use the OpenCV python library to take a series of automatic pictures from webcam

**03** **Iterate Through Pictures for API**  
Pass the pictures taken by OpenCV through VisionAI to get emotional values

**04** **Calculate Emotional Values**  
Take the average emotional values and weigh them to find positive or negative sentiment based on the emotions

**05** **Front End**  
Use Youtube API and voila to create a web app to visually demonstrate the capabilities of our project



# Google's VisionAI API

- Google's VisionAI uses machine learning to understand given images and provide insights
- Can analyze emotions using facial expressions in an image and returns likelihoods that the subject is experiencing a certain emotion
- VisionAI can also identify objects in an image such as blackboards, and shoes
- Can also read handwriting and establish metadata based off inputs

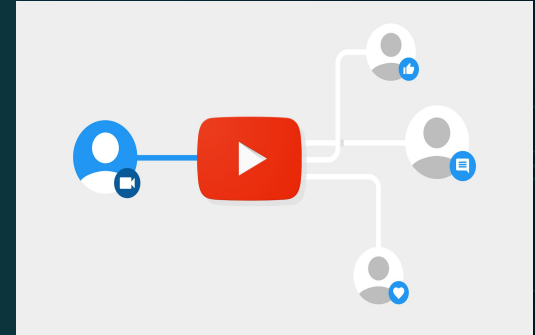


Cloud Vision API



# Google's Youtube Data API

- The YouTube Data API allows you to integrate functions that are ordinarily performed on the YouTube website into your own website or app
- It enables you to pull the length of Youtube videos and gain access to statistics available in the developer analytics section of Youtube
- Gives permission to use Youtube data for project purposes



# API INTEGRATION

- JoyScore interacts with the VisionAI API by passing real time images taken using the OpenCV Python library
- VisionAI then outputs likelihoods of a certain emotion as a dictionary type
- Isolating the likelihoods, we created an algorithm that converted all the likelihoods into a sentiment score to determine whether content should be recommended or not
- To display and gather data on video content, JoyScore uses the Youtube Data API
- Youtube Data API allowed us to find the duration of youtube videos to determine how many images should be taken of a user while watching a video

# Scalability

- JoyScore in its current form is capable of detecting a user's emotions to provide a suggestion of whether it recommends similar videos
- We envision JoyScore to be implemented in video streaming services such as YouTube, Tiktok, and on a grander scale, Netflix and Disney Plus
- Joy Score will allow video streaming services to recommend content to users based on their preferences
- A machine learning algorithm could allow JoyScore to more accurately predict a user's emotions over time as it learns from user data







**Thank You!**