Trademark Analysis & Identification Tool (TRAIT)

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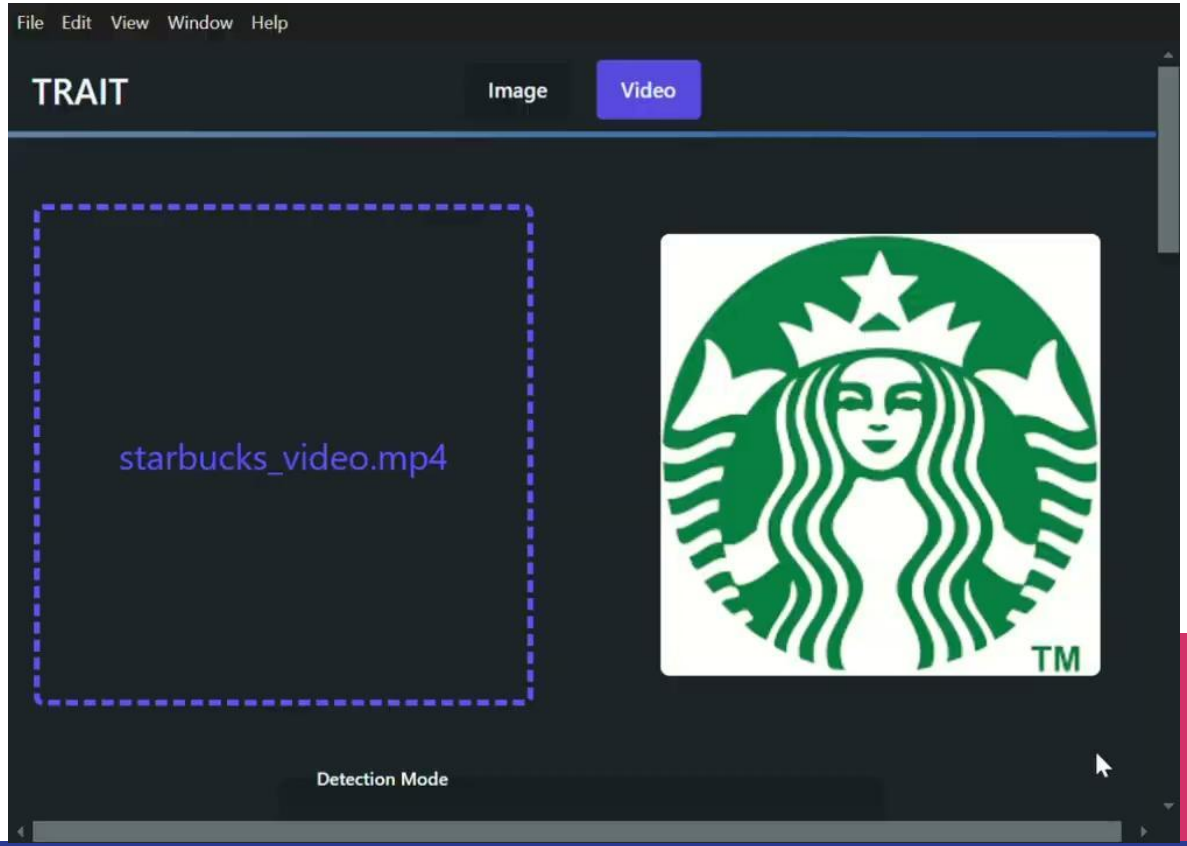
Specific Logo Video Search

Got Video Specific Search working and implemented

- This feature builds on the general search functionality but adds an extra step:
  - After detecting logos in video frames, we check if we have this logo stored in our FAISS vector database
    - If it exists, we've already verified that this logo is the same of what we are looking for
    - If not, then run a verification vote to determine if the detected logo and the reference logos are the same

Video Specific Search Demo



Cleaned Up Code

~~Use Drawbbox on image processing~~

~~In Compare_logo_embeddings we can probably use verify_vote~~

~~Process_video_specific can use other FAISS functions~~
- ~~Need to test if the same videos work in the notebook and application~~

~~Process_video functions have duplicated code (beginning)~~

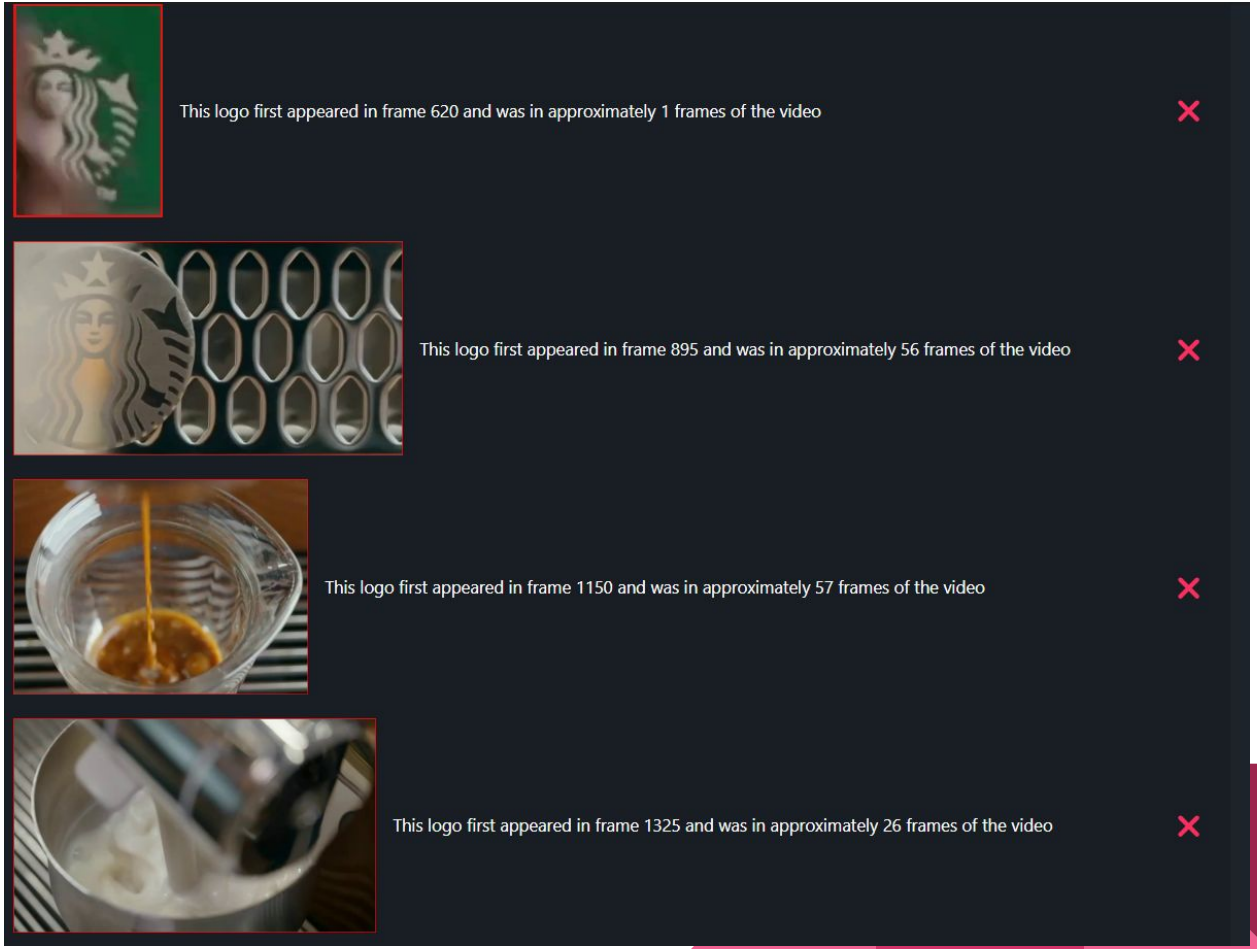
~~image general search needs to use extract_logo_regions~~

~~Be able to X out of displayed logo metrics~~
- ~~Manually remove false positives~~

~~Make video sending faster~~
- ~~Make its own implementation/function/route~~

Metric Display

The user now has an option to visually hide/delete any “logos” they no longer want to see in the metric display list



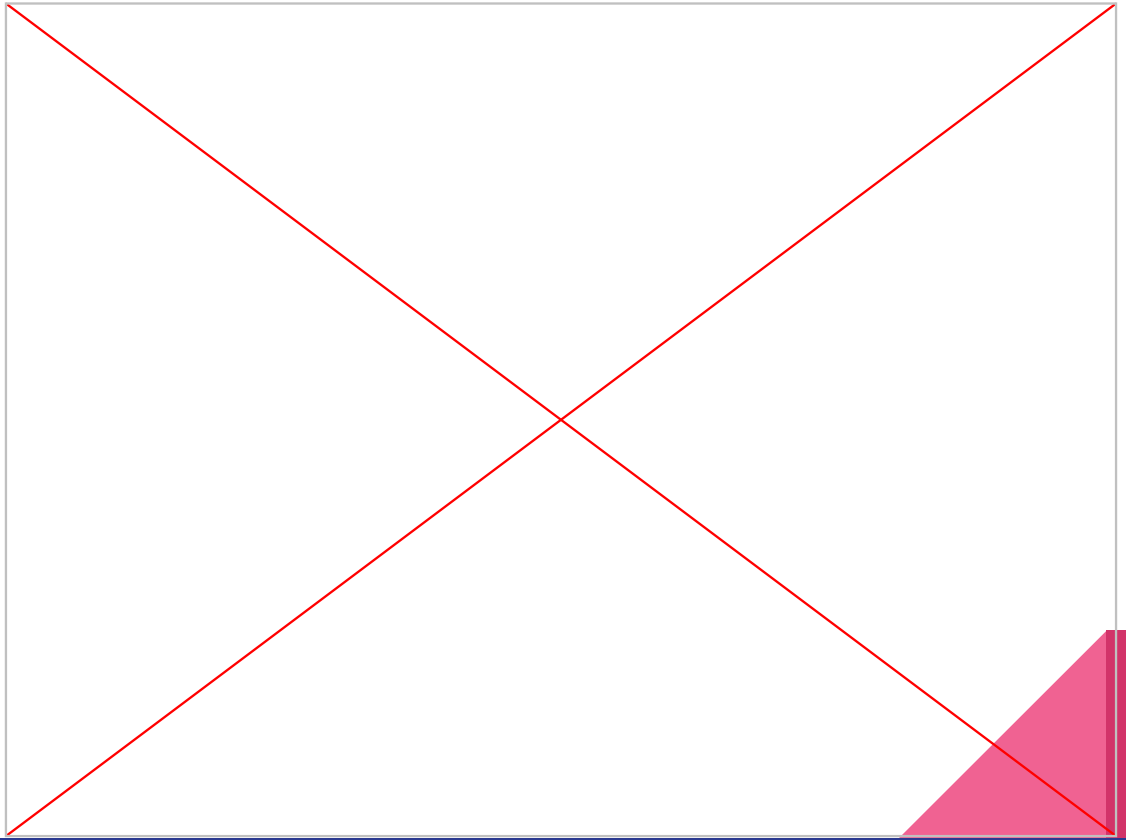
Logo Tracker

We’ve had lots of problems with the tracker losing tracking of the spacial area or not initiating a new tracker due to logo misclassification

To resolve this we have pivoted away from using a OpenCV tracker and have decided to prioritize accuracy over speed

We now are performing detections every 5th frame until a logo is found then every frame is ran through our model until there is no logo found which triggers it to revert detections back to every 5th frame

Logo Tracker Demo



Challenges

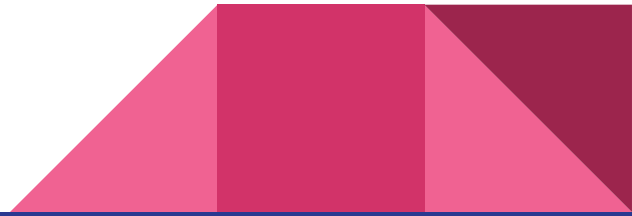
Building backend executable with Nuitka (The compiling process has been very time consuming)

Making backend executable quick and efficient

Code breaking unexpectedly when refactoring

Components not working like they should

Making functions/components of code modular and dynamic so that they can work with either images or videos



What’s Next

Video needs bounding box color - Caleb
Clean up a little more code - Caleb
- Video specific and frontend

Figure out how to efficiently build executable - Logan
Implement boundary box tracker for specific logo search - Logan

Add a loading bar when we process video - Logan & Caleb

Check extensions of images/video uploads - Lane
- Validate the file extensions

Preview video when uploaded - Lane
Prevent bounding boxes drawn over each other - Lane

Change submit button to cancel button when video is being processed to cancel detection function
Minor cosmetic tweaks to make more visually appealing and easy to read/use