CS Capstone Design

Technical Demo Grading Sheet (100 pts)

TEAM: LangLens

Overview: The main purpose of the "Technical Demos" is to very clearly communicate the extent to which the team has identified key challenges in the project, and has proven solutions to those challenges. Grading is based on how complete/accurate the list of challenges is, , and how convincingly and completely the given demos cover the given challenges.

This template is fleshed out by the team, approved by CS mentor, and brought to demo as a grading sheet.

Risky technical challenges

Based on our requirements acquisition work and current understanding of the problem and envisioned solution, the following are the key technical challenges that we will need to overcome in implementing our solution:

C1: Object Detection - Successfully scanning objects from the user's surroundings. To prove a good solution, we will scan different objects showing a visual bounding box with the name of the object.

C2: Text Recognition - Accurately detecting words from the live input taken from a camera. To prove a good solution, in principle, we will need to demonstrate visual bounding boxes around the correct desired word with an above 70% confidence level.

C3: Translation - Accurately translating a given object or a word to the desired language. A good solution will give the object detection and text recognition output in the targeted language.

C4: Learning Page Image retrieval and database lookups for the definitions and words. The solution will show an image of the given object/word.

Challenges covered by demos:

In this section, we outline the demonstrations we have prepared, and exactly which of the challenge(s) each one of them proves a solution to.

Demonstration 1: Object Detection Demonstration

Challenges addressed: C1: Object Detection and C3: Translation

Flight Plan: Step by step overview of demo

1. First, we will pull up the object detection demo program.
2. Next, we will choose an available object in the room to detect.
3. From there, we will aim the camera at the chosen object in the room.
4. Finally, the demo will show a bounding box around the object that the camera was aimed at with an accurate translation to the label of the word in Spanish.
5. Store the scanned object label in an output file for lookup purposes.

Evaluation:

✔ Convincingly demo'd each of listed challenges?

✔ Other evaluative comments:

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Demonstration 2: Text Recognition Demonstration

<u>Challenges addressed:</u> **C2: Text Recognition and C3: Translation**

<u>Flight Plan:</u> Step by step overview of demo

1. First we will pull up the ocr demo program.
2. We will scan a page of printed text provided by the team for the demo.
3. The program will display the label of the words translated to Spanish within a bounding box.
4. We will then show that the words are able to be stored in an output file for lookup purposes.

<u>Evaluation:</u>

✔ Convincingly demo'd each of listed challenges?

✔ Other evaluative comments:

Demonstration 3: Learning Page

<u>Challenges addressed:</u> **C4: Learning Page**

<u>Flight Plan:</u> Step by step overview of demo

1. We will pull up the learning page template
2. We will simulate an input of a word to search in Unsplash for image retrieval.
3. An image retrieved by unsplash api will be linked with the scanned word
4. Display a basic version of a learning page with the word and image together to show that the learning page template can be filled out in the most basic way.

<u>Evaluation:</u>

✔ Convincingly demo'd each of listed challenges?

✔ Other evaluative comments:

Other challenges recognized by not addressed by demo:
If there were challenges you listed earlier that were *not* covered by a demo, list here. This will hopefully be a short list…but better to be clear about where you are. If you have items here, you could list (if applicable) any pending plans to reduce these risks.

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