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Final Project Write Up Notes

1. Initial Project Idea
   * 1. My project idea was to apply computer vision to criminal justice in order to help Law Enforcement synthesize video information into a standardized and easily understandable report.
   1. Project Goals
      1. Search a video via facial recognition for suspect identification.
      2. Generate a synthesized report that will display the recognized suspect face and other useful information with user input.
      3. Continue to search for useful information in the video with further applications of computer vision.
         1. Track the face through the figure and allow the report to be edited in order to add further observations about behavior.
         2. Track the figure in the video and allow the report to be edited in order to add further observations about behavior.
         3. Perform a text search on select video frames in order to collect textual information that could be useful to determine figure/surrounding characteristics.
      4. Perform the above goals with an easy to use user interface
         1. Time allowing would replicate all functionality into an app.
2. Algorithm
   1. Approach
   2. Hypothesis
3. Data Analysis
   1. Results
   2. Goals Achieved
4. Computer Vision Methods Used
5. Known Limitations
   1. Future Extensions
6. Contributions
7. Things that I Learned During the Project
8. Advice to Next Years Students (Undergrads).
   * 1. Start early on assignments!
     2. This class requires a large amount of time to complete. Expect to spend between 15-30 hours on assignments and significantly more time on the final project. Budget your time as best you can and make sure that you understand what you are trying to accomplish. Start with small examples and work up.
     3. Office hours are necessary to success but getting individual appointments are more helpful to understand and complete the task. Developing a personal relationship with the instructor is necessary for this course.
     4. Not going to class is not an option. Helpful hints are presented that can make the difference between success and failure on a programming assignments.
     5. Use the Internet to better understand concepts. Power point slides from other schools can contain helpful hints/basic code examples to help you with assignments.
     6. The book explains algorithms and concepts at a very high level. This can be good in order to understand the basic concept but makes it more difficult if you are struggling with specific aspects of a topic. See (iii) above for the solution when you are confused.
     7. You can succeed in this class if you choose to. However, it is easy to feel overwhelmed in both lectures and during assignments. The professor is there to help you succeed and you will realize that 15-20 minutes of office hours can make the difference in understanding and completing an assignment.
     8. There is a definite sense of accomplishment that comes with completing an assignment in this course because in every case you end up with a working implementation of a useful application of computer vision. Take pride in this and enjoy the exploration process that will inevitably take place while completing an assignment.