COMP400 Appendix A

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Software Evolution:

I will start by examining previous work on computer vision as it relates to facial recognition. I will specifically be looking for research which answers the following key questions:

1. What features exactly does computer vision use to recognize a person?
2. How does computer vision specifically identify the unique features in an individual which distinguishes them from other individuals?
3. How many photos must the algorithm require to correctly identify an individual?
4. Do the same facial recognition algorithms apply to other species like dogs?

To better understand the answers to these questions, I will also be examining sample code for facial recognition. After having gained sufficient knowledge about facial recognition, I will start coding my own basic facial recognition program.

Deliverables Schedule:

My deliverables schedule can be outlined as follows:

May: Review + document previous research

June: Code own facial recogition software

July: Test facial recognition software, finish report

Final Proving Experiment:

First, I will code my facial recognition software. My software will take in several images as input. After these images have been initialized and processed into the system, I will then test my program on a new set of images to see if the program recognizes the faces in the pictures entered as input. I will document each step of this process in detail.

UML Diagram as Plan:

There will be 3 functions in my facial recognition program: initialize(), process() and detectFaces(). First, initialize() will be called. initialize() will initialize and process (convert into a form the program can recognize) the images that are passed as an argument to this function. Each of these images should be assigned the name of the individual in the picture. Then, process() will process the test image. Finally, detectFaces() will use this information to identify the individuals in a test image passed as an argument. It will output an array which contains the names of the individuals in that image. Please see the below UML sequence diagram describing this: