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FINAL PROJECT PROPOSAL

DESCRIPTION:

We will have an iOS application that will allow the user to control a quadcopter and to take a short video of a "target" person. When selecting a target the idea is that the quadcopter will follow around the target person and it will transmit a video feed of what the quadcopter is seeing.

LAB PROJECTS:

Lab 1: iOS UI Elements
We will use several different iOS UI elements learned in developing Lab 1.

Lab 4: OpenCV/ video processing
We will use OpenCV to train a classifier using the images sent by the iOS app of the "target" person. We will then process the video feed from the quadcopter looking for the "target" person.

Lab 6: Tornado POST request
The images used to train the classifier will be uploaded to the server using a tornado POST request.

DESIGN CONSTRAINTS:

The tornado server and the OpenCV video processing will be located on an NVIDIA embedded system (Jetson TK1), which will be placed on the quadcopter.

The phone will connect to the NVIDIA wireless network.

The iOS application will allow the user to control the quadcopter.

The iOS application will extract 200 pictures out of the video the user takes of the target person. These images will be sent to the Tornado server thorough POST requests.

When all the POST requests have been served, the Tornado server will create a .txt file with the paths to all the pictures. Then the Tornado server will send the path to this file, through a socket connection, to the OpenCV application.

The OpenCV program will do the training and then use the model to identify the "target" person in the video feed and control the quadcopter such that the quadcopter maintains view of the "target."