Project 3

Due date is Tue May 8th. Project idea is due Fri Apr 13th. Graded out of 100 points.

For the third project you will be required to implement an "interactive" computer vision program using OpenCV. The project is required to:

- Have a constant video stream, waiting for an appropriate visual cue to appear to begin the real processing. This stream must be operating at a high frequency (>15 FPS).
- Once an appropriate cue appears (e.g. a game board, some coins, …) then the relevant ROIs are extracted, and they are processed, with information being displayed on top of the video stream. During this stage, the FPS may drop considerably.
- The processing must include appropriate cleaning of the images, color conversion, segmentation, and feature detection. As necessary it will also include machine learning or other pieces to accomplish its task.

Besides the project itself, you will also be required to present your project to the entire class during the final period for the class. The presentation will be 15 minutes long with up to 5 minutes for questions. The presentation must include:

- Demo of the program
- Description of the steps taken for the program to work
- Challenges in the computer vision
- Situations where it doesn't work

Rubric

20 pts	Detection of appropriate visual cue in live video stream
20 pts	Extraction and processing of ROI from video stream
15 pts	Display of information on top the video stream
15 pts	Documentation and good code formatting
30 pts	Final Presentation

By Friday April 13th your group must send me your top two choices for projects. They will be given out first-come-first-serve (duplication may be allowed, group of three should contact me specially).

Some projects to consider:

- Set Game Solver
- Receipt Reader
- Gas station Reader
- Coin Counter
- Pool Game Assistance
- Card Game Helper (e.g. Blackjack)
- Where's Waldo Finder
- Stickers on Faces
- Hand Gestures Control Presentations
- Rubik's Cube Identifier