Project Proposal

Motivation:

Nowadays, there is more emphasis on visualization. People begin to interact with images and videos. More cameras are equipped into laptops and other machineries. Plus, the users began to use more image processing application by using the images and cameras such as webcams to see his/her friend through online. Plus, even in laptop with webcam, there are face tracking applications. Websites such as YouTube and flickr.com are very popular amongst the users to share their videos and images. The movie industry apply blue-screen technique to capture the actor and change the background to show the viewers that even though he/she is not currently in that particular background location, in the screen, the person is in that particular specified place. However, the cost of having blue-screen is expensive. What if there is an application that can extract the foreground object and possibly substituting the background? Although one is not present in that particular place, but inside the screen or in the image, he/she can be located and even look like they are in the scene of where they want to be.

Audience of the project:

The audience of this project is for users who want to experiment themselves to be part of the scene that they want to be in, but they can’t be physically in. Also for people with disability, who are having a hard time to travel in long distance.

Project description:

For CS465 final project, I'm proposing to work on the integration of background subtraction and substitution algorithm and developing an application where the foreground object, such as human, will be separated from the real, “physical” scene and substituting the background so he/she can see themselves located at Paris, Egypt, and etc. of where they want to be located and see themselves in that location through the screen. Due to the algorithm’s complexity and the usage of computational resources, it might not run in real time (30fps) but still the users can see themselves almost in 20-25 fps by having themselves in visually in different location. By applying the background subtraction algorithm, the user will be separated from the current background. Later on, the background substitution algorithm will fill up the empty background and user can choose the image of the place that they want to be located at.