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Video Stabilizer for Mobile Phones

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Nowadays, all new mobile phone models must contain cameras. Using them to take snapshots and capture videos has already been a trend. Unlike digital cameras, cameras in mobile phones do not have much function to ensure the captured videos have good visual quality. Unsteady hands in capturing videos can lead to a large amount of shaking causing the captured videos to be unpleasant. Also, the outdoor environment may also bring a lot of noise which influence the video quality. Consequently, providing a complete solution to handle the unpleasant shaking effect caused by human hands and the environment effect in the videos is very important in the mobile phone applications.

The aim of this project is to develop a Video Stabilizer System for PCs and mobile phones such as Symbian phones to remove the unpleasant shaking components and handle the back-light effect in real time captured videos. The system is a program which runs in real time video capturing.
Video Stabilizer for Mobile phones, is a real time pre-processing system in the review function of video capturing. The frames captured by the camera of the mobile phone will first go to the anti-shaking system which handles the unpleasant effects of the video. Then the processed frames will go to the backlight correction system to enhance the image. In the addition part, we tried to encode the stabilized frame in the mobile phone and transmit it to a PC through Internet. The aim of the additional part is to do a streaming between mobile phone and the PC.
MSEs between the stabilized and original video frames against the previous frame are used to measure the stability of the video stabilizer.

The processed video is mathematically and visually stabilized.