EE368 Project Proposal:

Ranking the Video Quality of a You-Tube Search Results List

Shannon McKenna
mckennas@stanford.edu

The goal of my project is to develop a video quality metric (VQM) that is suitable for ranking the quality of you-tube videos that could help users identify the best quality video in their search results list. For example, if the user were to search for "how to tie a tie", the shaky, grainy, or poorly lit videos would receive a low score, while more professional productions would receive a higher score. Knowing the relative quality of the video may help the user choose the search result with the best content.

The difficulty in the project will be determining the best way to develop a VQM without a reference video. Most work in video quality assessment is based on assessment with a reference image and use statistics like peak signal-to-noise ratio and mean square error. However, some work has been completed for no reference videos. I intend to adopt some of the approaches presented in the recent literature to help develop a VQM that is best suited towards my project goals.

This video quality metric would be most helpful in sorting search results where the posted videos are predominantly homemade, such as small concert events or a small commencement event, where several videos show the same content, but some are of much better quality. To focus my project on these homemade videos, I plan to choose three to five different searches that turn up homemade videos. I will develop a VQM that is a single number descriptor that will be used to rank the video quality in the search results. The VQM will be a weighted average of several different inputs. In a brief literature survey, it is clear one of the most difficult aspects of video quality assessment is finding metrics that correspond well to human perception of quality. I will tailor the metrics I use to trend closely those properties of homemade videos that are the least desirable.

This project will not use an android device.

Sources:

