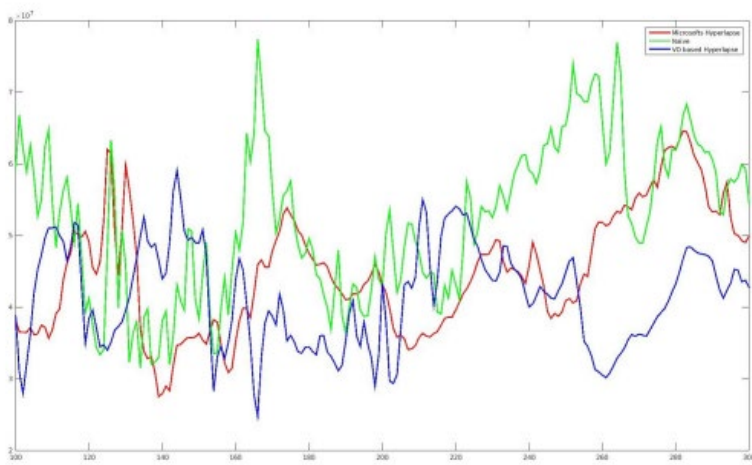
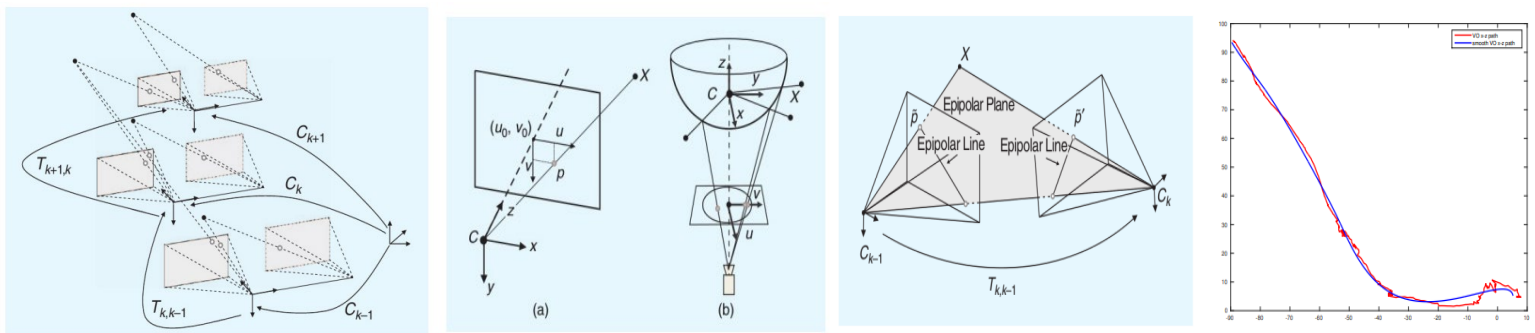
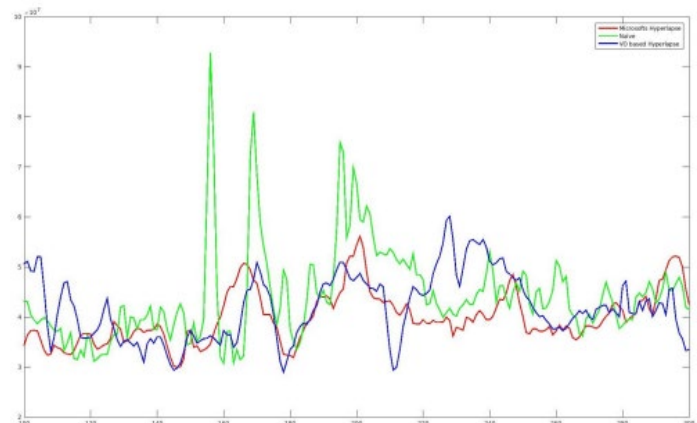


Title:	Visual odometry based hyperlapse creation
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Keyword(s):	Hyperlapse Visual Odometry Video Summarization Timelapse
Subject(s):	Video Processing Computer Vision Image Processing

Abstract: With the rise of multimedia technologies, people are transitioning from taking images to capturing long videos for creating memories. Many of these videos are shot using first person cameras. The videos they capture are long and boring. These videos can be made short by dropping frames i.e. by creating a timelapse. And then these selected frames can be stabilized with some standard video stabilization technique. At high speed up for the case of first-person videos, frame sub-sampling combined with video stabilization does not work, because the erratic camera shake present in the first person videos is amplified by naive sub-sampling. We propose an algorithm for creating hyperlapse (stabilized timelapse) using camera path obtained from visual odometry. We optimally select frames from the input video such that they follow a smooth camera path while maintaining a small pose change in frame-to-frame transitions. We present results for some challenging videos and compare them with existing techniques.



(a) Sequence I



(b) Sequence II