

Team 4 - Preliminary Project Report

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Abstract

With the evolution of high resolution digital cameras, snapshots have become a most common way to record and share visual data and experiences taken through mobile phones and tablets. But as humans, it is difficult to keep a stiff hold while capturing image, especially, when image is to be captured on move introducing blur. Though there lot of external tools for frame stabilization such as gimbal, mounting it on can be difficult at times. Hence, we propose this paper to solve this problem by processing the image with the aid of gyroscope sensed data which is attached with the camera device, helping to deblur the image. We aim to implement this deblurring with the help of deep convolution nets and extrapolate it with GAN's to give better quality and faster output than compared to traditional CNN's. With faster computation capabilities, we can extend this work to stabilise the video feed with lower frame rates.

1. Introduction

Most of the times, our desired scenes are in always in motion, capturing this in camera would introduce a fuzzy noise which is known as motion blur. This affect is also very severe in Autonomus vehichle which utilise sophisticated visual SLAM algorithms on live feed coming from camera or LIDAR sensors which are in motion. Here the motion blur would supress the important features needed to be obtained from the video feed. Even with state-of-the-art technology of camera manufacturing, motion blur affect is not being improved while the resolution of the cameras are getting better and better. Mechanically stabilising the sensor like camera or LIDAR is very hard, so we have to use rigourus algorithms to process the image and many **recent works** like came up with both linear and non-linear models to deblur the image but the processed images are having still some blur and implementation of such sophisticated algorithm in edge devices like mobile phones, DSLR cameras, etc is computationally infeasible.

2. Problem Statement

3. Literature Review

This section should clearly and in detail describe the literature you have read, and its relevance to the problem being solved. You are

4. Preliminary Results

This is an optional section. This could include any results you have been able to replicate from the literature as well as any preliminary results that you want to report.

5. References

List all the references you have read.