1. **Introduction**

* Given Problem Statement:
  + Given a setup consisting of 1 master camera and 4 secondary cameras streaming at 30fps with FHD resolution(1920x1080).
  + Design and develop a system which would stitch frames from different cameras to create a panoramic frame.
  + Implement Interactive Viewer/Player to view stitched frames.
* Image stitching first calculates the corresponding relationships between multiple overlapping images,deforms and aligns the matched images then blends the images to generate a wide fov image.
* Video stitching is an extension of image stitching, it stitches selected frames of original videos to generate a stitching template and subsequent frames are stitched according to the template.
* However, video stitching is more complicated with moving objects or violent camera movement because these factors introduce jitter, shakiness,ghosting,blurring.

1. **Issues**

**Todo**

1. **Existing Approaches to Video Stitching.**

**Todo**

1. **Proposed Initial Approach**

* We propose having two parallel streams of workflow:
  + The interactive player/GUI to view results.
  + Video stitching framework.
* For the initial stitching framework:
  + Use prebuilt open source image stitching modules.
  + Build a video stitching framework on top of that.
* Will integrate the framework to work on built GUI.
* Various issues described above can be identified from the outputs.
  + Various metrics can be used to quantify the quality of the stitching algorithm.
  + Can then look into the literature to help fix identified shortcomings of the framework.
* Further, Framework can be extended to work on challenging scenes such as moving objects and violent camera movements.
  + Can add other modules such as object detection and scene stabilization modules to enhance output.
* This workflow ensures intermediate deliverables and incremental improvements along with flexible timelines with maximal efficiency for everyone involved.