Video Recovery

Video Recovery

O-SNAP has intercepted a video signal of interest. We would like to view the signal in real time, however, several filters must be applied. The provided serial implementation cannot keep up with the frame rate.

Please modify using the pipeline pattern to increase the frame rate.

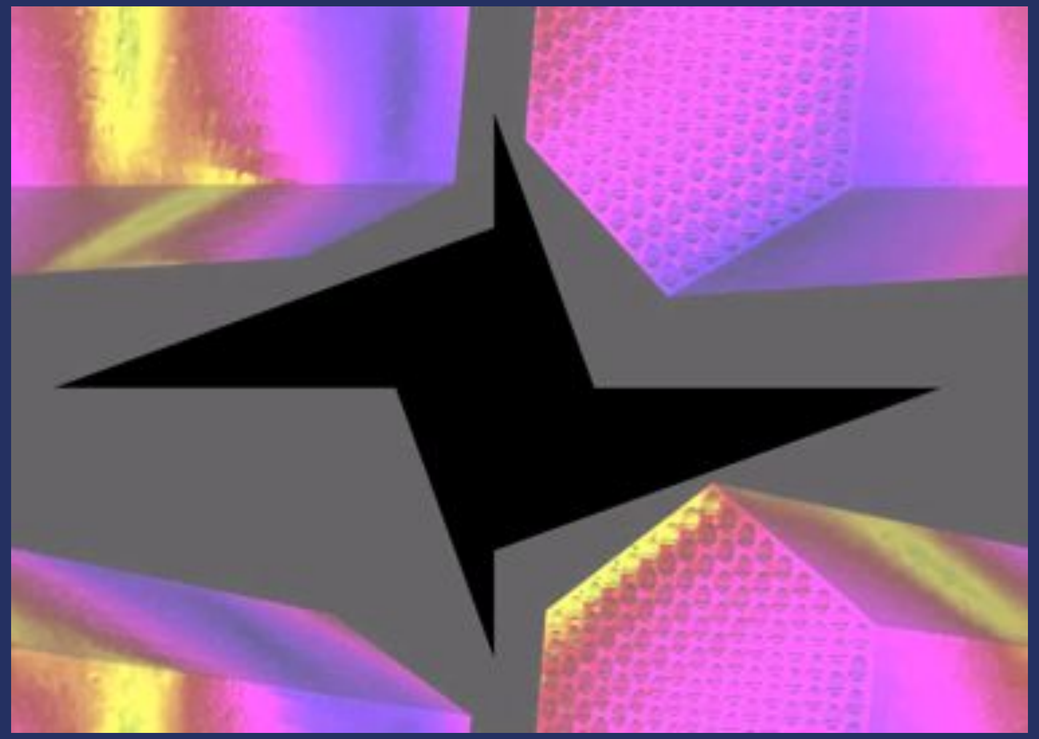


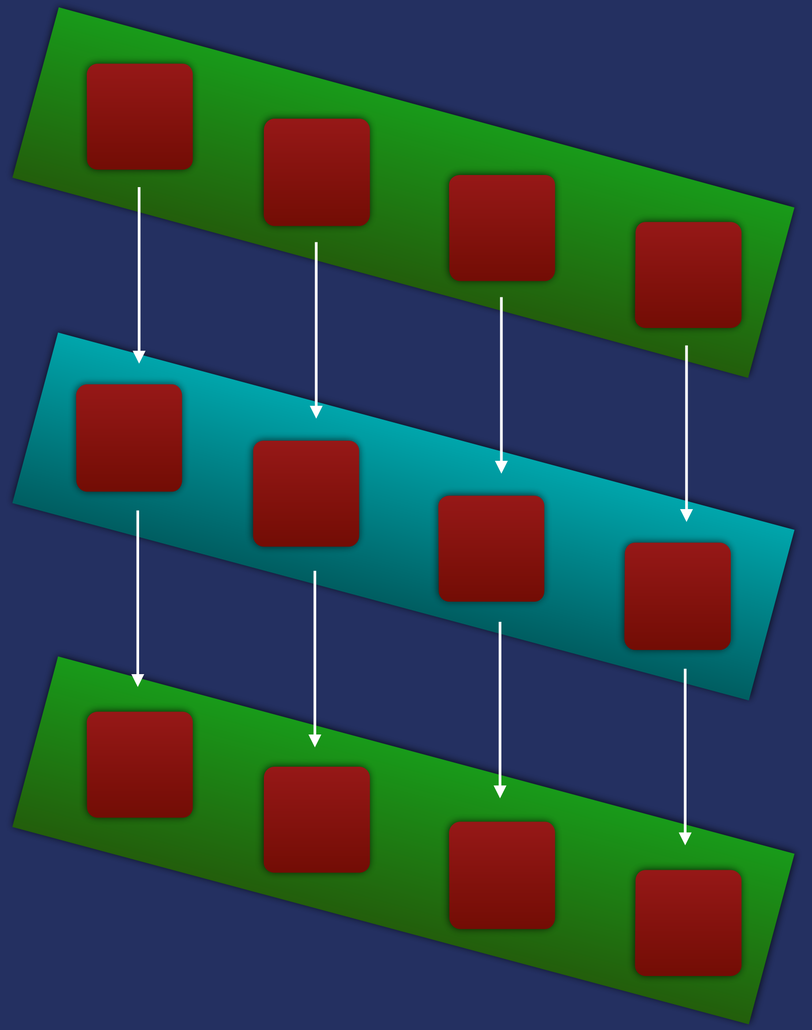
Image Filtering Core

```
void ungarbleVideo(char** imgList, int numImgs)
{
   Mat frame, brightFrameReturn, contrastFrameReturn;
   Mat pixelsFrameReturn, rotateFrameReturn;
   for(int imgNum=0;imgNum<numImgs;imgNum++){
      frame = imread(imgList[imgNum],CV_LOAD_IMAGE_COLOR);
      decreaseBrightnessFilter(frame, brightFrameReturn);
      decreaseContrastFilter(brightFrameReturn, contrastFrameReturn);
      rearrangePixelsFilter(contrastFrameReturn, pixelsFrameReturn);
      rotateMatFilter(pixelsFrameReturn, rotateFrameReturn);
      imshow("Nuclear Fusion",pixelsFrameReturn);
      waitKey(1); // display the frame for 1ms
   }
}
```

In: pipeline_serial.cpp

Pipeline Pattern

- Good for streams
- Parallelism is parameterized by pipeline depth and processors
- Slowest stage sets steady state time between outputs



Next Steps

Go to the shell and pull from the repository.

Only TBB provides semantics to express pipeline. You need only implement a solution using TBB.