Project New Vegas:

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Overall Scope: FPGA based adaptive video compression and Upscaling

Summary: Adaptive Compresion of an input video using FPGA and then upscale it at output.

Result: Should give a video with lower size but similar or higher resolution and quality than original, should be faster than current methods.Exploit parallelism in FPGA's to speed up the processes . Ideally want to do it without any ML to give ML like results but if not possible then use ML.

Project Timeline:

July: Literature review and basic scripting for proof of concept
Augusy-September: Begin with Audio Processing for Adaptive denoising, compression and upscaling , test with FPGA (This is to test the overall pipeline and as a proof of concept.)

October -December: Begin work on scaling the pipeline to Images (basically make it dimension agnostic , given a 1-D or 2-D signal it should be able to work) and Initial Optimization

December onwards:If results promising thus far expand optimization and move towards video, future scope to be discussed around November.

Meetings: One meeting a week to discuss papers and show progress another meeting can be held whenever needed.