**Literature Review**

Traditional cameras are not flexible and also unaware of their environment. They cannot provide constant and standard image quality in every environment because of their fixed (non-programmable) internal architecture. Along with image quality, image pre-processing is also crucial. The images need to be pre-processed before they can be used to generate useful results. Therefore ample amount of work done only to improve image quality and making pre-processing faster.

The authors of [1] use Field Programmable Gate Array (FPGA) architecture for making pre-processing faster. As the FPGA architecture has the ability to perform parallel processing, it will shorten the processing time and the efficiency will increase.

The authors of [2] present their contribution on the noise reduction problem by proposing an intermediary step between the image sensor and the post-processing software in the image capturing process. Their solution matches the discrete samples between multiple frames and averages the pixel values. The output image maintains its structural integrity, holds better color accuracy and incurs less noise than others.

The pre-processing generally occurs at server side. Server solution is simple and effective but it is costly and time consuming. Edge computing eliminates the need to send image data to server-side for processing. Provides a way to process the images directly on the camera by taking advantage of sensors and the use of end devices to take over the load of processing [3].

In [4] the detection and recognition tasks for surveillance are executed locally by edge devices. Only when devices are not able to execute the recognition task, a recognition request is sent to the server.

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