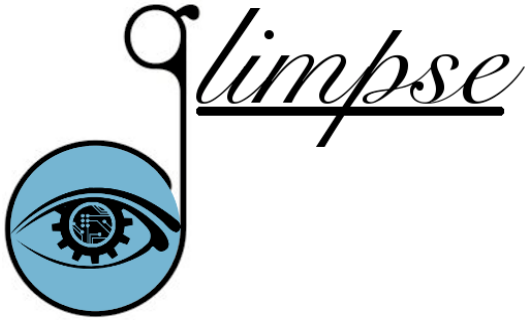

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Machine vision is a rapidly growing industry. However, there is still a significant financial barrier to setting up an embedded machine vision system. There are a number of systems which provide an adequate hardware setup to capture and process video, but consumers either have to invest a large amount of time into setting up the system or purchase expensive cores in order to perform advanced image processing. We will be taking advantage of the open source OpenCV library and the Raspberry Pi 3 with a camera module to develop an open source library of higher-level image processing and machine vision algorithms for use in embedded applications.

Glimpse is specifically optimized for use on the Raspberry Pi 3 (which runs at 1.2GHz) with camera module. At a minimum, Glimpse will be capable of real-time video processing, performing sharpening, blurring and color inversion, on 1080p video at 30fps. The algorithms and tools included in Glimpse will be fully customizable. Other potential algorithms to implement are real-time image retargeting using seam carving, edge detection, face detection, and more advanced deblurring algorithms. Glimpse will allow a developer with minimal programming experience and a low budget to produce high-quality, customizable, results for embedded machine vision applications.

Figure 1: Raspberry Pi with camera module

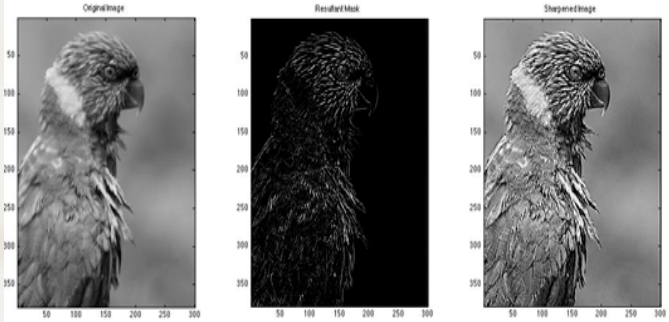

Figure 2: Overview of basic sharpening algorithm results