

Implementation of image enhancement techniques based on Intel Edison platform

ABSTRACT

Image enhancement (IE) is to produce images with suitable visual quality. These enhanced images can then be used in many image processing applications, for e.g., remote sensing, medical imaging, and aerial imaging. However, most of the previous applications have been implemented on traditional computers, which are expensive and large. This work addresses the implementation of IE techniques like color balance, brightness, contrast, and sharpness, on a low cost platform (Intel Edison). The proposed enhancements are programmed by Python, with the assistance of Python imaging library (PIL). Two systems are being run, traditional computer and Intel Edison. The performance evaluation has been done by comparing the visual appearance and histogram of the enhanced images. The result shows that both systems produce similar outputs. Hence, with the low cost (75\$) and tiny size (6×2.9×0.8 cm) of Intel Edison compared to the traditional computer (500\$), performing IE on the Intel Edison is a viable low-cost alternative.

Keyword: Embedded system; Image enhancement; Intel Edison; Microprocessor; PIL; Python