Hybrid ARM and FGPA based Face Detection

an

UNDERGRADUATE THESIS PROPOSAL

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

One of the most important sensory ability of humans with the highest information density is vision. The filtration methods of the human scene understanding capability is able to operate even in the high abundance of information by focusing on some elements while suppressing the rest. Artificial visual attention has been one of the key methodologies taken from nature that inspire researchers to develop robust and efficient machine vision systems for visual search applications.

As a scientific discipline Computer Vision collects the theory for building artificial systems that obtain information from images. Image data can either be a video frame, view from multiple cameras, or a multi-dimensional data from a medical scanner. Modern computer vision systems are applied in fields of process control, event detection, information organization, modeling of objects and man-machine interaction. The mentioned applications are often found applied in a wide array of industrial commercial, home and office applications.

The study of computer vision describes the artificial vision system implemented in either software or hardware or the combination of both. One such software implementation is the open source computer vision library more commonly called as OpenCV. This library of programming function mainly aimed at real-time computer vision is free for use under the Berkeley Software (BSD) license. Released around 1999, OpenCV was a project from an Intel Research initiative to advance CPU-intensive applications.