

PERFORMANCE OF THREE DIMENSIONAL IMAGE PROCESSING METHOD BASED ON DATA LAYERING NORMALIZATION USING TENSORFLOW

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ABSTRACT: Three dimensional image processing is used in different image process real time applications such as medical imaging, satellite communication, underwater photography and industries. Imagery algorithms are used in day to day life. The huge data and complexity, the processing of images are tedious process and couldn't get effective decision. Image processing algorithms are parallel processing and we need to use multicore CPUs and Graphics Processing units. The high resolution image processing are pulse compression, synthetic aperture, tomography and underwater photography. So processing above three dimensional images, we implement data layering normalization in 2D plane. The dynamic range three dimensional images are selected and processed by using data layering normalization. The proposed method has been analyzed and tested using TensorFlow. Here we use multicore deep learning GPUs test method normalization process and verified by using experimental data. This method provides strong robustness, image background equalization and decision making capabilities.

KEY WORDS: Three dimensional image processing, Tensorflow, data layering, normalization, Tensorflow, deep learning

I. INTRODUCTION

Image processing is major thrust area and many of the industries are using various image processing techniques such as image enhancement, restoration, compression and multimedia application. These internet world huge volumes of multimedia data are used in various applications like social media, medical field and research industries. The variety of image analytics tools are used to process images and making effective decision. Nowadays, robot process automation, deep learning, machine learning, virtual reality and augmented learning are played vital and next few year they are rolling the world [1].

Google TensorFlow is the platform and building model for machine learning, deep learning and neural network applications. This tools has optimization, image pre processing, inference generation and residue analysis. This tool is modular extensible design so we will use for specific applications. This tool will be used in heterogeneous environments like multicore processing, GPUs, Server computing and Tensor processing units. This is deep learning framework with Python API and open source application by Google [2].

Tensorflow has computation graph, edges and operational nodes. This is arbitrary dimensional arrays and process multiple inputs & outputs. Tensors are used to process one node to another node [3]. The edges are used to find the flow and computations. Computational graph is generated in each stage for verifying performance. This is high order processing tool so we will get effective decision making results [4][5].

In this paper we implement image processing algorithm to evaluate three dimensional image using GPUs. We evaluate several image operations like image gradient calculation, edge detection, image transformation and segmentation. This paper has following sections, section II describes related works, section 3 describe methodologies and models, section 4 explains implementation and results and section 5 gives conclusion and discussion.