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PERFORMANCE ANALYSIS OF  
MORPHOLOGICAL OPERATION IN CPU AND  
GPU FOR MEDICAL IMAGES

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# Abstract

My future work is about on GPU accelerated medical image processing, and is meant to serve as an overview and introduction to existing GPU implementations.

The aim of Phd. work will be the efficient implementation of the morphological filters and other image processing filters. Morphological filters implemented are commonly used in medical image analysis and are employed for enhancing the edges CAD (Computer Aided Detection) system for human nodule detection. Image processing methods significantly contribute to visualization of images captured by biomedical modalities (such as mammography, X-ray computed tomography, magnetic resonance imaging, and light and electron microscopy)

Previous work covers GPU acceleration of basic image processing operations (morphological, filtering, interpolation, histogram estimation and distance transforms), the most commonly used algorithms in medical imaging (image registration, image segmentation and image denoising) and algorithms that are specific to individual modalities (CT, PET, SPECT, MRI, fMRI, DTI, ultrasound, optical imaging and microscopy).