Abstarct:

This thesis discusses image processing and filtering techniques with emphasis on Mean filter, Median

filter, and different versions of the Iterative Truncated Arithmetic Mean (ITM) filter. Specially,

we review in detail the ITM algorithms (ITM1 and ITM2) proposed by Xudong Jiang.

Although filtering can reduce noise in an image, it usually also results in smoothening

or some other form of distortion of image edges and fine details. Therefore, maintaining a proper

trade of between noise reduction and edge/detail distortion is key.

In this thesis, an improvement over Xudong Jiang's ITM filters, namely ITM3, has been pro-

posed and tested for different types of noise and for different images. Each of the two original ITM

filters perform better than the other under different conditions. Experimental results demonstrate

that the proposed filter, ITM3, provides a better trade of than ITM1 and ITM2 in terms of

attenuating different types of noise and preserving fine image details and edges.