

## C216804: MAJOR COMPUTER SCIENCE

KEY WORD: DIGITAL IMAGE ENHANCEMENT / DIGITAL IMAGE ENHANCEMENT TOOLS /  
FILTERING

SRISUDA JARUKE : BASIC DIGITAL IMAGE ENHANCEMENT AND TOOLS.

THESIS ADVISOR : NONGLUK COVAVISARUCH. 114 pp. ISBN 974-584-248-6

The purposes of this thesis are to study and gather techniques that are used in digital image enhancement and to develop software tools. These image enhancement tools must be user friendly. The results from using these tools could be applied for further software development.

The digital image enhancement tools were designed and developed to use with 256-gray level images on micro-computers. The designed tools are categorized mainly in 3 groups: grayscale modification, image sharpening and edge detection, and image smoothing and noise removing. Users are allowed to freely select any provided operations continuously. Up to two operations from the last can be cancelled. In addition, image addition and subtraction are also provided. The users can save the result images within 2 image file formats which are BMP and PCX formats.

From this research, it was found that there are several digital image enhancement techniques, and which techniques should be chosen and used depend on the objective of such work. It was also found that, many times, the best results of enhancement came from trial and error of either one or more usages of enhancement techniques. Therefore, these image enhancement tools will provide users in testing and seeing results from any chosen image enhancement techniques before real work is implemented. In addition, these tools are helpful to anyone who is interested in and studies image enhancement techniques in that he or she can see the results of applying enhancement techniques without having to program it by him- or herself as it usually was in the past.