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Image enhancement background for high damage malay manuscripts using adaptive Threshold Binarization
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Abstract
Jawi Manuscripts handwritten which are kept at Malaysia National Library (MNL), has aged over decades. Regardless of the intensive sustainable process conducted by MNL, these manuscripts are still not maintained in good quality, and neither can easily be read nor better view. Even thought, many states of the art methods have developed for image enhancement, none of them can solve extremely bad quality manuscripts. The quality of old Malay Manuscripts can be categorize into three types, namely: the background image is uneven, image effects and image effects expand patch. The aim of this paper is to discuss the methods used to value add the quality of the manuscript. Our propose methods consist of several main methods, such as: Local Adaptive Equalization, Image Intensity Values, Automatic Threshold PP, and Adaptive Threshold Filtering. This paper is intend to achieve a better view image that geared to ease reading. Error Bit Phase achievement (TKB) has a smaller error value for proposed method (Adaptive Threshold Filtering Process/PAM) namely 0.0316 compared with Otsu's Threshold Method/MNAO, Binary Threshold Value Method/MNAP, and Automatic Local Threshold Value Method/MNATA. The precision achievement (namely on ink bleed images) is using a proposed method more than 95% is compared with the state of the art methods MNAO, MNAP, MNATA and their performances are 75.82%, 90.68%, and 91.2% subsequently. However, this paper's achievement is using a proposed method/PAM, MNAO, MNAP, and MNATA for correspondingly the image of ink bleed case are 45.74%, 54.80%, 53.23% and 46.02%. Conclusion, the proposed method produces a better character shape in comparison to other methods. © 2018, Insight Society.

Author Keywords
Adaptive equalization; Automatic threshold; Ink bleed; Malay Manuscript

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