Character Segmentation and Recognition for Myanmar Warning Signboard Images

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This paper publicizes the character segmentation and recognition of the Myanmar warning text signboard images taken by a mobile phone camera in natural scene. In this system, two templates are created. The first template that contains both connected pixel words and characters are used for character segmentation and the second template that contains only the connected pixel characters are used for character classification. Color enhancement process is first performed to extract the text regions. By preprocessing the color enhancement, the system can overcome the some illumination conditions. To remove the background noises on the binary images, color threshold based filtering, aspect ratio based filtering, boundary based filtering and region area based filtering techniques are used. As a next step, line segmentation and character segmentation are done. Line segmentation is performed using horizontal projection profile and character segmentation is done using vertical projection profile and bounding box methods. In the character segmentation process, template matching method is used by training connected pixel words. These connected component characters are recognized using 4 × 4 blocks based pixel density and total chain codes, four rowsbased pixel density, four columns-based pixel density and count of eight directions chain code on the whole character image and on each block of character image. This system is investigated by feature-based approach of template matching on 160 camera captured Myanmar warning signboards.