

## Automatic Extraction of Character Sequences from Electric Signboards in Nighttime Scene Images in Japan

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Digital cameras as well as smart phones, tablet terminals, and mobile phones with built-in cameras are popular today because of their ease of use. The ubiquity of mobile camera phones, in particular, has allowed widespread use of quick-response (QR) codes for delivering information services. For this purpose, it is important for image processors to be able to identify a signboard in an image and extract its character sequences. Techniques for extracting a character sequence from a signboard can be combined with various other systems to realize a range of services. In a previous study, we proposed a method for detecting a character sequence from images captured in the daytime. To construct an effective recognition system, it is also important to examine images captured at night. At night, electric signboards are more clearly visible, but it is still necessary to consider conditions that may affect electric signboards, such as stains or lighting irregularities. Therefore, we propose a method for extracting a character sequence from an electric signboard in nighttime scene images.

**Key Words** : Scene image, Signboard, Extracting a character sequence, Image processing