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Coarse Fine Template Stretching for Character Recognition

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Even when approximate location is known, the identification of alphanumeric characters subject to perspective distortion can take large amounts of computer time. In our application, involving the reading of characters on vehicle number plates, the characters are further subject to image noise. To cater for perspective variation within the context of a template matching approach requires that a family of templates be utilised, over a wide range of widths. To obviate the need for exhaustive scanning through an entire library of variable width templates, a coarse fine approach to template selection for matching purposes has been developed which complements a strategy for number plate location [1]. A matching error criterion is used for coarse fine switching [2] which uses the rate of change of matching error to select either the coarse or fine strategy. The actual location of alpha characters has been through the use of template marching techniques applied to the number plate border, [1] Coarse fine search techniques have given a speed up of four to one on similar problems [2]. The use of sparse templates can also speed up the search by a large factor depending on image complexity, [4]

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