要 旨

対判定を用いた類似文字の詳細識別

大和　一夫

文字認識の重要な課題として類似文字識別がある．本論文では組合せ論理を用いて類似文字の詳細識別を行う手法を提案する．組合せ論理は特徴と当該特徴の取り得る特徴量の上限値，下限値から成る．入力パターンの特徴が組合せ論理で設定された特徴の上限値，下限値をすべて満たせば当該カテゴリと識別される．組合せ論理は特徴空間において区分線形的な識別決定境界を構築することができるので，適切に設計すれば高い性能が期待できる．組合せ論理の特徴は級内分散・級間分散分散比最大基準により選択した．閾値の上限値，下限値は学習パターンにおける特徴量の最大値，最小値をそれぞれ設定した．類似文字対 10 組に対する学習パターン，評価パターンの識別率は投影距離のそれよりそれぞれ 15.5%，6.3%上回った．このことは投影距離を用いた識別の後段に組合せ論理を用いた詳細識別の構成が有効であることを示唆している．

キーワード　文字認識，類似文字，詳細識別，組合せ論理

Abstract

Precisely classification of similar-shaped charactar using judgment of pair

Kazuo Yamato

Similar-shaped character recognition is an important problem for character recognition. This paper proposes a novel precisely classification method using combinatorial logic for similar-shaped character recognition. Combinatorial logic consists of feature and lower bound value and upper bound value that the featue should take. If features of the input pattern satisfies all the conditions defined by the lower bound value and upper bound value, input pattern can be identified the category of combinatorial logic. Combinatorial logic can be expectable with high performance because it can construct decision boundary described by piecewize linear. The feature of combinatorial logic were selected by Fisher's criterion. The upper/lower bound value were decided by the maximum/minimum value of feature quantity introduced by feature distribution. In the experiments using ten pair of similar-shaped characters, the combinatorial logic exceeded the projection distance method by 15.5% and 6.3% at the recognition rate for the training data and test data, respectively. These results suggest cascade structures that combinatorial logic follows projection distance method is effective.

key words Character recognition, Similar-shaped character, Precisely classification, Combinatorial logic