

ABSTRACT

Handwritten character recognition is a translation problem of human writing into machine-editable text format. In this research, hierarchical graph matching is presented for handwritten character recognition. Handwritten characters were transformed into graphs according to their underlying skeleton structure. Edges of the extracted graph were categorized into shape types and vertices were extracted from each of the edges using line simplification algorithm. Matching procedure of the graphs was performed in hierarchical approach and followed sub-graph isomorphism principals. Performance evaluation of the proposed method was conducted using two different compositions of CEDAR database. The first evaluation was performed using validated CEDAR database which excluded samples with wrong label and unidentified writing samples. In this scenario, the method reached a recognition rate of 93.40%. The second evaluation was performed using the default composition of CEDAR database and the method reached 88.61% recognition rate.

Keywords: Handwritten Character Recognition, Graph Matching, Hierarchical Classification