Choosing Shape Features by means of Genetic Algorithms for Glyph-clustering of Historical Documents

International Journal of Computer Applications
© 2014 by IJCA Journal

Volume 102 - Number 3
Year of Publication: 2014

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10.5120/17792-8585
{bibtex}pxc3898585.bib{/bibtex}

Abstract

The solution for a feature selection problem is presented in the field of document image processing. The choice of shape features for describing glyphs of historical documents is a non-trivial task since the variations of glyphs in different documents is innumerable. Hence, the manual selection of shape features would be a cumbersome task. To select a subset of features from a given set a genetic algorithm is used which optimises the result of a clustering process by x-means. The result of x-means is evaluated by using different quality measures. The optimisation methodology is illustrated within a case study, in which the selection of an appropriate set of features is a crucial part of the system. The intended application supports a user who is transcribing historical documents by showing him similar occurrences of a given glyph.

References

- SBPK Berlin, Phillipps 1870, fol. 11v, 1870.
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Index Terms

Computer Science

Artificial Intelligence

Keywords

Document Image Processing  Genetic Algorithms  Feature Selection  Shape Descriptions

Glyph Clustering

X-Means