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Abstract

KNOWLEDGE-BASED INTELLIGENT
PHOTOSHOT-TO-TRANSLATION SYSTEM

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Knowledge-based system is a widely used reasoning tool for solving complex problems, diagnosis systems and symbolic inference systems etc. In this thesis, a knowledge-based system is utilized for the integration of image processing, optical character recognition and machine translation, and the management of their operation. The name of this system is “knowledge-based intelligent photoshot-to-translation system” and its objective is to accomplish the process of “photoshot-to-text-to-translation” in an intelligent and automatic way. First this system extracts the characters or numbers from digital images; and then recognizes these characters or numbers as English words or Arabic numbers; finally translates these words into Chinese words. Therefore this research is an innovation in language processing and automatic control. This paper describes the design and implementation of this system. Furthermore, in order to raise the accuracy and efficiency, the techniques of expert system and hybrid neural fuzzy network are adopted, because expert system can carry the control of each function module and image handling. By means of hybrid neural fuzzy network, the accuracy of OCR can be improved, even on the ambiguous or uncertain cases. On the other hand a graphical user interface is constructed to provide easy manipulations.