

ABSTRACT

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Genetic Algorithm For Alphabet Recognition

(xii + 72 pages, 40 figures, 13 tables, 1 appendix)

As a searching algorithm, Genetic Algorithm imitates the principles of natural selection and natural genetics. In nature, a good chromosome will survive so the chromosome in the next generation will become better. In one cycle of generation, there are some methods such as selection, recombination and mutation to get the best chromosome in a generation.

In Alphabet recognition, genetic algorithm software is developed for searching the best assignment between coordinate representation of an observed alphabet and coordinate representation of a model alphabet. An alphabet is recognized when the error value of the total distance between coordinate representation of an observed alphabet and coordinate representation of a model alphabet approaches zero. The sum of distance can be calculated by searching the optimum transformation parameter that can minimize the error of the coordinate coupling.

Experimental results show that genetic algorithm could find the best assignment even though the observed alphabet has undergone a similarity transformation such as rotation, translation, and scaling. In the experiment of finding the optimum value for genetic variable, defining the crossover probability value in the first place will get a better result than mutation probability. The experimental results show that the percentage of recognition success reached 83,6%.

References: 13 (1991 - 2006).