

Genetic algorithms are computer programs that try to mimic the process of natural evolution. These algorithms are mostly used for solving problems of optimization, which can be NP-hard or NP-complete. The optimization using genetic algorithms is often very slow. In this thesis, we examine the idea of directed crossover instead of the standard random process. Directed crossover is based on the assumption that some features of population members are more useful than others. We thus try to identify these good features in the current population and promote them in future generations. In our implementation and experiments on two specific optimization tasks, directed crossover has lead to only a slight improvement over a standard genetic algorithm and Hill-climbing.