

**Shortest Path Routing in Multihop Packet Switching Communication Network
using Genetic algorithm¹**

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This paper considers uni cast routing problem for networks where transmission requests are established by point to point connection. In this paper, the static routing problem of a given network has been formulated as a single objective optimization problem, and solved using a variant of genetic algorithms which minimizes the cost of existing links. Variable length chromosomes and their genes are used to encode the problem. The cost of existing links between different source and destination paths have been used to evaluate the fitness of chromosome. The crossover operator exchanges partial chromosomes at positionally independent crossing sites. The mutation provides the diversity of the population in the solution space by flipping of one of the genes of the candidate chromosomes, thereby keeping away from local optima. This algorithm has been tested on a known network of twenty nodes where the cost functions are known. It has also been calculated the average of best scores and the mean scores of all the individuals in a population pool after ten generations and fifty random trials.

¹ Referencing style followed: Journal of Information and Management, Elsevier B.V.

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