Abstract

Genetic algorithm is a search heuristic that mimics the natural process of evolution and it generates solution to a very complex NP-Hard problems. Genetic algorithm belongs to the class of evolutionary algorithms (EA) and it generates solution by using nature inspired techniques like selection, crossover and mutation. The performance of the genetic algorithm is mainly depends on the genetic operators. Genetic operators have the capability to maintain the genetic diversity. This paper mainly describes the available selection mechanisms as well as the crossover and the mutation operators.

References

An Observational Analysis of Genetic Operators

- Y?lmaz Kaya1, Murat Uyar2, Ramazan Teker3, "A Novel Crossover Operator for Genetic Algorithms: Ring Crossover".
- Dr. Elgasim Elamin Elnima Ali, "A Proposed Genetic Algorithm Selection Method".
- Tom V. Mathew, "Genetic Algorithm".
- Tobias Blickle, Lothar Thiele, "A Comparison of Selection Schemes used in Genetic Algorithms".
- Yang Chen, Jinglu Hu†, Kotaro Iwasawa‡, "GARS: An Improved Genetic Algorithm with Reserve Selection for Global Optimization".
- Khaled Rashed, "Guided Crossover: A New Operator for Genetic Algorithm Based optimization".
- Andrew Lima, Brian Rodrigues, Fei Xian, "A Genetic Algorithm with Hill Climbing for the Bandwidth Minimization Problem".
- Sandeep Rajoria1, Carlos Soares2, Jorge Pinho de Sousa3, and Joydip Dhar4, "Predicting the Outcome of Mutation in Genetic Algorithms".
- Wilhelm Erben, HTWG Konstanz, "Genetic Algorithms", wilhelm.erben@htwg-konstanz.de.
- "Tutorial: Genetic Algorithm;"

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