

# Comparison of Binary Code and Real Code in the Genetic Algorithms

呂映皚、劉大銘

E-mail: 9607847@mail.dyu.edu.tw

## ABSTRACT

With the progress of computer technology and rapid computation, the application of genetic algorithms(GA) in engineering has been increasing. GA is based on natural selection and survive. Its advantage are globally optimal search, simple operation and no derivative. This paper concerns mainly on solving mechanical engineering problems by using GA which adopts fast non-dominated sorting, elitist operator, diversity with crowded method in the tournament selection. First, illustrated exploration of single objective and multiobjective problems. The optimal solution of multiobjective problems is represented by Pareto curve. Next, illustrated exploration of computation efficiency between binary code and real code. Results for the problems discussed in this paper show that the uniformity of Pareto curve of real code is better than that of binary code, also that computation efficiency of real code is faster than that of binary code.

Keywords : genetic algorithms ; real code ; binary code ; Pareto curve

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