

A Genetic-Fuzzy Logic Based Load Balancing Algorithm in Heterogeneous Distributed Systems

游坤明, Ching-Hsien Hsu, Chwani-Lii Sune
Computer Science & Information Engineering
Computer Science and Informatics
yu@chu.edu.tw

Abstract

Distributed processing is recognized as a practical way to achieve high performance in various computational applications. Many dynamic load-balancing algorithms have been proposed for parallel and discrete simulations. But the actual performances of these algorithms have been far from ideal, especially in the heterogeneous environment. In this paper, a hybrid approach using fuzzy supervised learning and genetic algorithm is presented. The fuzzy membership function is dynamically adjusted by the genetic coding. Moreover, the proposed load-balancing algorithm has learning capability. The experimental results show that our proposed algorithm has better performance comparing with other classical load balancing algorithms.

Keyword : Load-balancing, genetic algorithm, fuzzy logic, heterogeneous environment