

BATGA: A GENETIC ALGORITHM WITH DAMPED-ACCELERATION BASED ADAPTIVE TERMINATION MECHANISM

TRIDIB R. SARMA

Associate Professor, School of Management Sciences, Tezpur University, Tezpur, Assam, India

ABSTRACT

This paper presents a design for a Damped-Accelerator based termination for Genetic Algorithms. The necessity is felt to expand the sampling space within the search space when the search space size varies.

The concept is tested on the Resource-Constrained Project Scheduling Problem (RCPSP), which is an acknowledged NP-hard problem. By testing a gradually evolving set of termination mechanism, this paper finally conceptualizes a termination criterion incorporating a combination of exponentially accelerating but logarithmically damped mechanism. Mathematical proof of the concept is kept outside the scope of this paper. Experiments on benchmark test instances have shown results comparable with the best in literature.

KEYWORDS: Genetic Algorithms, Damped, Acceleration, Resource Constrained Project Scheduling