Abstract

This paper applies a routing strategy based on Tarantula Mating Behavior as proposed by the authors, Bandyopadhyay and Bhattacharya [1], on a manufacturing network. The particular behavior which is of interest is that the female Tarantula spider sometimes eats the male Tarantula just after mating for satisfying immediate need for food or for genetic purpose. This interesting behavior has been simulated with the help of a hierarchical multi-agent based framework where the master agent at the top of the hierarchy takes the final decision with the help of PROMETHEE multi-criteria decision analysis technique, based on the data for various criteria as delivered by the worker agents at the leaf level of the hierarchy. Fuzzy orientation has been added to the measurement for one of the criteria and in the calculation of PROMETHEE decision analysis technique. The strategy has been applied successfully on a
manufacturing network.

References

- Saaty, T. L. 1994 Fundamentals of Decision Making and Priority Theory: With the
Applying Tarantula Mating based Routing Strategy on Manufacturing Network

Analytic Hierarchy Process. RWS Publications, Pittsburgh, USA.

**Index Terms**

Computer Science  
Fuzzy Systems

**Keywords**

Tarantula Mating Behavior  
Routing Strategy  
Hierarchical Multi-agent System;  
Multi-criteria Decision Analysis Technique  
Manufacturing Network