Special session on:

Swarm Intelligence and its applications

Congress on Evolutionary Computation, Canberra, Australia, 8th - 12th December 2003

Swarm Intelligence is an AI technique that focuses on studying the collective behaviour of a decentralised system made up by a population of simple agents interacting locally with each other and with the environment. Although there is typically no centralised control dictating the behaviour of the agents, local interactions among the agents often cause a global pattern to emerge. Examples of systems like this can be found abundant in nature, including ant colonies, bird flocking, animal herding, honey bees, bacteria, and many more. This kind of "swarm-like" algorithm, such as Ant Colony Optimization (ACO) and Particle Swarm Optimization (PSO), have already been applied successfully to solve real-world optimization problems in engineering and telecommunication. SI models have many features in common with Evolutionary Algorithms. Like EA, SI models are population-based. The system is initialised with a population of individuals (i.e., potential solutions). These individuals are then manipulated over many generations by ways of mimicking social behaviour of insects or animals, in an effort to find the optima. Unlike EA, SI models do not use evolutionary operators such as crossover and mutation. A potential solution simply "flies" through the search space by modifying itself according to its relationship with other individuals in the population and the environment.

This special session will highlight the latest development in this rapidly growing research area of Swarm Intelligence. Authors are invited to submit their original and unpublished work in the areas including (but not limited to) the following:

- Particle swarm optimization
- Ant colony optimization
- Artificial life
- Culture algorithm
- Ecologically inspired models
- Other nature-inspired computation techniques
- Multi-objective optimization
- Constrained optimization
- Scheduling
- Real world applications

Organizers: Dr Xiaodong Li (RMIT University, Australia), Dr Gao Liang & Dr Gao Haibing (University of Science & Technology, China)

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Important dates:

Submission:	**June 23, 2003**
Notification :	**August 9, 2003**
Camera-Ready:	**September 9, 2003**
Conference:	**December 8-12, 2003**

For more information, please go to the website**: http://goanna.cs.rmit.edu.au/~xiaodong/cec03-session/index.htm**