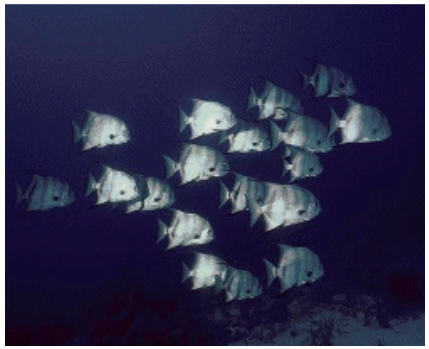
Special session on:

Swarm Intelligence

*Congress on Evolutionary Computation 2006 (part of **WCCI 2006**), Vancouver, BC, Canada, from 16-21 July 2006*

Swarm Intelligence (SI) is an Artificial Intelligence technique involving the study of collective behaviour in decentralized systems. Such systems are made up by a population of simple agents interacting locally with one other and with their environment. Although there is typically no centralized 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 in nature, including ant colonies, bird flocking, animal herding, honey bees, bacteria, and many more. Swarm-like algorithms, such as Particle Swarm Optimization (PSO) and Ant Colony Optimization (ACO), 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 initialized with a population of individuals (i.e., potential solutions). These individuals are then manipulated over many iteration steps by mimicking the social behaviour of insects or animals, in an effort to find the optima in the problem space. Unlike EAs, SI models do not explicitly use evolutionary operators such as crossover and mutation. A potential solution simply 'flies' through the search space by modifying itself according to its past experience and its relationship with other individuals in the population and the environment.



This special session will highlight the latest developments 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 Authors are invited to submit their original and unpublished work in the areas including (but not limited to) the following: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
- Differential Evolution
- Ant colony optimization
- Culture algorithms
- Other nature-inspired computation techniques
- Multi-objective optimization
- Constrained optimization
- Optimization in Dynamic Environments
- Swarm Intelligence models for evolving Neural Networks
- Scheduling
- Game Learning
- Comparative studies of Swarm Intelligence models
- Real world applications

Organizers: Dr Xiaodong Li, Dr. Yuhui Shi, and Dr. Jürgen Branke.

Important dates:

Submission:	**January 31, 2006**
Notification:	**March 15, 2006**
Camera-Ready:	**April 15, 2006**
Conference:	**June 16-21, 2006**

Technical committee: James Kennedy (USA), Maurice Clerc (France), Thomas Bartz-Beielstein (Germany), Renato Krohling (Germany), Andries P Engelbrecht (South Africa), Frans van den Bergh (South Africa), Chilukuri Krishna Mohan (USA), Xiaohui Hu (USA), Leandro dos Santos Coelho (Brazil), Konstantinos E. Parsopoulos (Greece), Michael N. Vrahatis (Greece), Gerry Dozier (USA), Mark Wachowiak (Canada), Renata Smolikova (Canada), Xiaodong Li (Australia), Yuhui Shi (USA), Jürgen Branke (Germany)

For more information, please go to the website: **`http://goanna.cs.rmit.edu.au/~xiaodong/cec06-swarm/`**