Nature-Inspired Computing

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Message from the Guest Editors

In the process of long-term evolution, life has accumulated many novel functions, from which human beings have been inspired to improve their tools. People have consciously carried out this research, which is known as "bionics". Bionics, as the name suggests, is to imitate some functions of biology. There are many famous examples such as the "dolphin skin swimsuit" which imitates dolphin skin. When scientists studied the skin of whales, they found that there were grooves on it. Scientists constructed a film on the surface of airplanes according to the structure of whale skin. According to the experiment, about 3% of the energy could be saved. If such a surface was covered on airplanes all over the country, billions of dollars could be saved every year. This is bionics. This is one aspect of our learning from nature. On the other hand, we can also obtain enlightenment from the laws of nature and use its principles in design (including algorithm design). This is the idea of nature-inspired computing.

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- metaheuristic algorithms
- evolutionary algorithms
- swarm intelligence
- soft computing
- biodegradability prediction
- cellular automaton
- artificial immune system

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