Abstract Details

Title: Artificial Immune Systems

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Abstract: Artificial immune system (AIS) mimics the superior properties of biological immune system and provides an effective method in intelligent computing and intelligent system designing. But the disease-causing mechanisms of immune pathology have led to sever security problems in artificial immune system. In the paper, we analyzed the basic principles of immune protection and immune pathology of biological system considering its application in artificial immune system. Then we take artificial immune defending system as an example to analyze the cause and potential influence of immune pathology on AIS. As to the different security problems from immunodeficiency, hypersensitivity and autoimmunity, we put forward corresponding measures to reinforce the security, robustness and stability of artificial immune system and thus effectively avoid these problems.

Keywords: Immune pathology; artificial immune system; negative selection algorithm; immunodeficiency; system Efficiency.