

Special Issue on Artificial Immune Systems: Theory and Applications

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Natural immune systems are sophisticated and complex defense and maintenance systems with remarkable capabilities, such as learning, memory, and adaptation. The immune system can be viewed in two parts: the innate immune system and the adaptive immune system. The innate immune system is inherited from birth, and endows on the host non-specific recognition of pathogenic material. The adaptive (or acquired) immune system is afforded by the specific recognition of pathogenic material, and adapts over the lifetime of the host through a process of cloning, mutation, and selection. During the past decade, numerous novel computational models and algorithms have been developed based on such immunological principles. Artificial Immune Systems (AIS), inspired by the natural immune systems, are an emerging kind of soft computing paradigm. Applied to a wide variety of applications, the AIS have recently gained considerable research interest from different communities. Their successful industry applications include robotics, optimization, fault tolerance, process control, etc.

This special issue focuses on presenting the latest work in the theory and applications of artificial immune systems. The topics of interest for this special issue include, but are not limited to:

- Immunological modeling
- Population and network based immune algorithms
- Architectures and frameworks inspired by immune systems
- Novel developments in AIS, such as danger theory and cognitive immune paradigm

- Applications of AIS (including industrial employment of artificial immune algorithms)
 - Hardware implementation of AIS
 - Immunoinformatics
 - Fusion of artificial immune systems and other soft computing methods
 - Theoretical analysis of AIS
- Prospective authors are invited to submit their full papers to the guest editors before the deadline.

1 Important dates

Paper submission: 31 July 2007
Acceptance/rejection notification: 30 November 2007
Special issue publication: Spring 2008

2 Guest editors

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