

## Suggested Topics

- New paradigms for capturing and exploiting memory in pervasive adaptive systems
- Algorithms and methodologies facilitating and studying emergence in pervasive systems
- Emergence of behaviour over multiple time-scales
- Quantifying emergent information in pervasive systems
- Exploiting local and global information in a pervasive system

## Technical Chairs

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## Important Dates

Submission: December 19th 2008  
Symposium: April 8th, 2009

## Submission

Papers must be no longer than **8 pages**. Formatting instructions and sample files can be found at the Convention website here:

<http://www.aisb.org.uk/convention/aisb09/downloads.php>

All paper submissions will be managed through the Easy Chair system

<http://www.easychair.org/conferences/?conf=perada09>

## AISB Convention

<http://www.aisb.org.uk/convention/aisb09/>



The PerAda Symposium is organised by the PANORAMA Coordination Action funded by the European Commission's FET Proactive Initiative on Pervasive Adaptation

# 2nd PerAda workshop

[www.perada.eu](http://www.perada.eu)

## Symposium on Pervasive Adaptation: Emergence

to be held at AISB 2009

The vision of a technology-rich future in which computing is truly ubiquitous poses significant engineering challenges. Multitudes of heterogeneous devices will be required to operate in an ever-changing networked environment which has no central control point or controller. These dynamically created systems will have to continuously organise and adapt; adaptation of individual components will lead to adaptation of the system as a whole and to the emergence of new system behaviours. For this vision to be realised, new approaches to both hardware and software are required to endow systems with the capability to achieve these goals. *Systems* in this context may range from small ad-hoc collections of mobile devices in a local environment to massive collections of devices which self-organise into tribes of societal artefacts. Such systems will exhibit emergent *behaviours*, arising from interactions within the system. Behaviours will emerge over a range of timescales, ranging from short to very long and should be capable of adapting as the underlying network itself adapts. Emergent behaviours should be *useful*; how can this be controlled and quantified?

Secondly, there will also be an emergence of *information* within the system; this occurs at a number of different levels: *Local* information is held by individual devices - as networks of devices are formed, a meta-level of information emerges which is held by the network as a whole; this comes from sharing, aggregating, comparing and interpolating information and experiences held by individuals. This 'meta-information' is a rich source of information, which can then be exploited by the network. However, it also raises a number of questions. For example, how can we encapsulate and exploit that information e.g. to influence individual local decisions? How do we decide at the local level what information to remember and which to forget taking into account the effect on the global knowledge? How do we aggregate and reconcile possibly conflicting information held by individuals across the network?

In this workshop we solicit papers which address *emergence* in pervasive adaptive systems. Papers which address emergence of behaviours and information in such systems are particularly sought, however we also welcome papers which address any aspect of emergence in a pervasive adaptive system.



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