

## FUZZ IEEE 2011 - TAIWAN

### Workshop on “FUZZY APPROACHES TO AMBIENT INTELLIGENCE”

#### Organizers Information:

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#### *Brief Description*

Ambient Intelligence (AmI) is an emerging paradigm that promotes the development of advanced living environments equipped with huge number of heterogeneous computing and networking devices “smarted” in providing innovative services to improve user experience. Ubiquitous computing technology is one of the main feature of AmI systems: Ubiquitous Computers expands the way human live the environment where data-intensive, unstructured spaces featuring autonomous or decentralised control require novel approaches to the analysis, design and integration of computer-embedded systems. The combination of different features arising from AmI definition (heterogeneity and mobility of devices, physical and behavioural user information, etc.) makes the analysis and design of these computer ecosystems very complex. This complexity is due to the large number of unforeseeable interactions between ecosystem inhabitants (users and devices). Computational intelligence techniques and methods (in particular fuzzy logic, neural networks, genetic algorithms, etc.) represent a new way to map these interactions. In fact, the goal of the proposed workshop is to highlight new opportunities and challenges in the development of AmI environments by exploiting computational intelligence approaches.

Within this context, original contributions are solicited in all relevant areas, including but not limited to:

- Context Awareness
- Self-Organising Sensor Networking
- Ubiquitous computing
- Autonomous systems
- Agents and intelligent components for resource limited devices (requirements, porting, downsizing, etc)
- Hybrids systems, integration and interworking of wired and wireless networks in ubiquitous computing
- Computational Intelligence and Machine Learning algorithms
- Augmented reality in AmI systems
- Intelligent and Natural Human/Computer Interactions
- Technological support of Ambient Intelligence
- Applications in AmI environment (AmI and Arts, Smart Homes, AmI learning ,Ambient Healthcare, Ambient Entertainment etc)
- Embedded Controls
- Security , Privacy and Legal aspects for the AmI space
- Social Emergence and Evolution
- Bio-Inspired Techniques
- Emergent Information Systems for AmI environments
- Self-Organising Software Agents
- Evolutionary Computation for AmI environments
- Biological Computation for AmI environments
- Adaptive Nanomachines and Nanorobotics for AmI environments

#### Tentative list of presentation:

- AT LEAST 3 CONTRIBUTORS FROM ITALY
- AT LEAST 3 CONTRIBUTORS FROM UK
- AT LEAST 3 CONTRIBUTORS FROM REST OF EUROPE
- AT LEAST 2 CONTRIBUTORS FROM US
- AT LEAST 2 CONTRUBUTORS FROM EAST-ASIA