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Introduction

This special issue of *Integrated Computer-Aided Engineering* (ICAE) is devoted to the International Conference on Artificial Neural Networks (ICANN 2006) held on September 10–14, 2006 in Athens, Greece.

The ICANN conference is organized annually by the European Neural Network Society in cooperation with the International Neural Network Society, the Japanese Neural Network Society and the IEEE Computational Intelligence Society. It is the premier European event covering all topics concerned with neural networks and related areas. The ICANN series of conferences was initiated in 1991 and soon became the major European gathering for experts in those fields. In 2006 the ICANN Conference was organized by the Intelligent Systems Laboratory and the Image, Video and Multimedia Systems Laboratory of the National Technical University of Athens in Athens, Greece.

From 475 papers submitted to the Conference, the International Program Committee selected, following a thorough peer-review process, 208 papers for publication and presentation to 21 regular and 10 special sessions. The quality of the papers received was in general very high. Authors of 18 most innovative papers were invited to submit substantially extended papers to ICAE. Each paper was required to be extended substantially with additional unpublished original computational contributions. The extended papers were reviewed using the journal's standard review process. The six papers included in this issue are those that passed the journal's review process.

A variety of topics constituted the focus of paper submissions. The first paper by Taylor *et al.* deals with connectionist cognitive science investigating attention, object occlusion and representation. The second paper by Kimura and Ikeguchi comes from the neural dynamics field, focusing on dynamic and stochastic packet routing. The third paper by Cyganek deals with pattern recognition and particularly with classification of circular road signs. The next paper by Eckmiller *et al.* combines biometric data and learning in secure communication links. The last two papers come from the image analysis and vision area. The former by Villaverde *et al.* focuses on morphological neural networks for simultaneous localization and mapping, while the latter by Raftopoulos *et al.* deals with shape-based invariant image classification.

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