Editorial for special issue on ICONIP2010 “applications of neural information processing”

Andrew Chi Sing Leung

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It has been over 17 years since the first International Conference on Neural Information Processing (ICONIP) held in Seoul, Korea. ICONIP is organized by the Asia-Pacific Neural Network Assembly (APNNA). The aim of ICONIP is to bring together scientists, practitioners, and students worldwide, especially from the Asia-Pacific region, to discuss the challenges and trends in the field of neural information processing.

This special issue on “Applications of Neural Information Processing” is aimed at disseminating the latest development of applications in neural information processing. I am very pleased to see that different scholars from different countries and cultures come up with new thinking and idea. The papers solicited are selected from papers presented in the ICONIP 2010. Eventually, twelve papers are invited and included in this issue. We include the papers:

1. “Computational identity between digital image inpainting and filling-in process at the blind spot” describing an image inpainting algorithm based on physiological evidence and conjecture.
2. “Seeking an appropriate alternative least squares algorithm for nonnegative tensor factorizations” investigating a recursive method based on the nonnegative quadratic programming for nonnegative tensor factorizations.
3. “Self-organizing map based color palette for high dynamic range texture compression” proposing a self-organizing map-based algorithm to generate a large codebook for compressing high dynamic range images.
4. “Pathway-based microarray analysis for robust disease classification” demonstrating that negatively correlated feature set can be used to effectively incorporate pathway information into expression-based disease classification.
5. “Multi-view gender classification using symmetry of facial images” describing the way to use the multiple kernel learning for classifying multi-view facial images.
6. “Adaptive cascade of boosted ensembles for face detection in concept drift” presenting an adaptive learning algorithm for face detection under a non-stationary environments.
7. “Machine learning approach for face image retrieval” describing a neural-based face image retrieval system.
8. “Decision-based filter based on SVM and evidence theory for image noise removal” presenting a SVM-based approach for removing impulsive noise from noisy images.
9. “Novel input and output mapping-sensitive error back propagation learning algorithm for detecting small input feature variations” using a neural-based approach for the mura defect detection which is very important issue for manufacturing of the TFT-LCD panel.
10. “Joint learning of error correcting output codes and dichotomizers from data” formulating the joint learning of error correcting output codes and dichotomizers as a constrained quadratic programming problem.
11. “Learning to memorize input–output mapping as bifurcation in neural dynamics: relevance of multiple

A. C. S. Leung (✉)
Department of Electronic Engineering,
City University of Hong Kong, Kowloon Tong,
Hong Kong, China
e-mail: eeleungc@cityu.edu.hk

timescales for synapse changes” investigating the dependence of the memory capacity on timescales on the basis of neural dynamics.

12. “Combining LVQ with SVM technique for image semantic annotation” describing the way to combine LVQ technique and SVM classifier for improving image semantic annotation accuracy speed.

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