Editorial for special issue on ICONIP2011 “Advances in Learning Algorithms”

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Published online: 4 November 2012
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It has been over 18 years since the first International Conference on Neural Information Processing (ICONIP) held in Seoul, Korea in 1984. ICONIP 2011 was held in Shanghai, China. It is an annual event 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 “Advances in Learning Algorithms” is aimed at disseminating the latest development in neural information processing. I am very pleased to see different scholars from different countries cultures come up with new thinking and idea. The papers solicited are selected from papers presented in the ICONIP 2011. Eventually, twelve papers are invited and included in this issue. We include the following papers:

1. “The coordinate descent method with stochastic optimization for linear support vector machines” describing a support vector machine (SVM) learning algorithm for reducing the computational complexity in SVM learning.
2. “Shape space estimation by higher-rank of SOM” proposing a shape classification method based on self-organizing maps (SOMs).
3. “Efficient nonlinear classification via low-rank regularised least squares” investigating the use of regularised least squares for constructing SVM based classifiers.
4. “HEALPIX DCT technique for compressing PCA based illumination adjustable images” demonstrating the way to compress an image data set based on principal component analysis (PCA) and discrete cosine transforms.
5. “Combining affinity propagation with supervised dictionary learning for image classification” describing a way to use sparse coding with affinity propagation method for image classification based on SVM learning.
6. “Proximity multi-sphere support vector clustering” describing a clustering algorithm that considers several hyper-spheres.
7. “Robust speech recognition based on independent vector analysis using harmonic frequency dependency” presenting an independent vector analysis-based approach for speech recognition.
8. “Discriminative speaker recognition using large margin GMM” describing a kernel method for speaker recognition based on the Gaussian mixture method (GMM).
9. “A multi-task framework for metric learning with common subspace” formulating a novel framework to make metric learning benefit from jointly training multi-tasks.
10. “PSO-based K-Means clustering with enhanced cluster matching for gene expression data” proposing a particle swarm optimization (PSO)-based clustering algorithm for handling investigating gene expression data.
11. “Relationship between phase and amplitude generalization errors in complex- and real-valued feed forward neural networks” experimentally investigating the generalization ability of complex valued neural networks.

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12. “Fast statistical regression in presence of a dominant independent variable” proposing a statistical framework for approximating monotonic functions.

Here, I would like to thank the authors of this special issue for contributing to this special issue. Finally, I would

like to express our gratitude to the anonymous referees for making this special issue in a better shape.