

Introduction

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The International Conference on Neural Information Processing (ICONIP) is a prestigious event organized by regional active academicians to explore and exchange ideas on neural networks and related disciplines since 1994. The ICONIP2006 covers topics on neural network theory and models, computational neuroscience and cognitive science, hybrid systems and hardware, and neural network applications. In this special issue of *Journal of Intelligent Information Systems*, we have invited two original papers from ICONIP that highlight the research in neural networks.

Ban et al. present the multi-manifold partition method to identify the interlacing low dimensional patterns from high dimensional data space. A neighbourhood graph is utilized to capture the topological structure. Primary structures searching and merging algorithms are developed to estimate the dimensionalities of the vectors in the neighbourhood graph, unite the connected vectors with the same dimensionality and merge primary structures.

Martin-Merino et al. present a semi-supervised Sammon mapping to handle sparse and high dimensional data. The proposed technique is applied to generate word maps for a collection of scientific abstracts. It is shown that it improves the discriminate power significantly.

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