複合轉換函數神經網路

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摘要

Traditional back-propagation network (BPN) uses Sigmoid function as transformation function of hidden units; on the other hand, radial basis function network (RBFN) uses Gaussian function as transformation function. These two kinds of structure have their own advantages and disadvantages toward solving different problems. In order to combine these two structures' advantages, the hybrid transfer function neural network (HTFN) is proposed. HTFN has both Sigmoid and Gaussian functions inside the same hidden layer. Experiments with five human-made problems and five real-world problems were conducted. The results showed that BPN or RBFN has its own advantages and disadvantages toward specific problems, and HTFN surpass both of them. This proved that using both Sigmoid and Gaussian function as transformation functions inside the same hidden layer could combine both transformation functions' advantages.

關鍵字：BPN, RBFN, transformation function, Sigmoid function, Gaussian function.