

论文与报告

## 综合集成的构思在模式识别中的应用

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摘要

将从定性到定量的综合集成法(metasyntesis)的构思用于模式识别,即用基于监督学习的网络进行集成,把若干个由不同方法构成的识别系统所得到的结果进一步加工,经过由人指导的学习,综合了各个系统的优点,从而获得比单个系统性能更好的识别结果.对四个自由手写数字识别系统进行综合集成的实验,充分表明了该方法的有效性.更进一步,把基于监督学习的网络集成法,用于手写汉字识别中关于“模板”(templet)的建立,起到了模拟形象思维的作用,从而为识别自由手写汉字打下了基础.

关键词 [综合集成](#) [监督学习](#) [模式识别](#) [集成](#) [模板](#)

分类号

## Metasyntesis and its Application to Pattern Recogniton

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Abstract

In this paper, the idea of metasyntesis from the qualitative to the quantitative is applied to pattern recognition. The main point of metasyntesis is to combine computer system with human intelligence. Thus, in pattern recognition, it can be realized by supervised learning. So, a new integration method, named NISL (Network Integration on the basis of Supervised Learning) is proposed to combine multiple recognition systems. Obviously, NISL makes full use of human aids so that a better result can be achieved. The exciting result of an experiment which combined four unconstrained handwritten numeral recognition systems fully demonstrated the effectiveness of the proposed method. Furthermore, the idea of NISL can be developed to establish the templates of complex patterns, such as handwritten Chinese characters. Since the concept of template plays an important role in image thinking, NISL contributes greatly to both noetic science and pattern recognition, thus lays a foundation for the computer recognition of unconstrained handwritten Chinese characters.

Key words [Metasyntesis](#) [supervised learning](#) [pattern recognition](#) [integration](#)

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