

THE APPLICATION OF NEURAL NETWORKS WITHIN BRITISH RAIL

Although computer models of neural networks first appeared in the early 1950s, it is only recently that interest in them has intensified. This has been made possible by the advent of relatively inexpensive, high performance personal computers capable of simulating neural networks, and by breakthroughs in training algorithms. The motivation for the resurgence of neural networks stems from the failure of knowledge-based systems in complex pattern-recognition domains, e.g. image and speech recognition.

The objective of this report is to give an appraisal of the current state of neural network technology and to provide an insight into how it could benefit British Rail.

Despite being far less sophisticated than the human brain, neural networks will have a major impact on intelligent signal processing and pattern recognition. Actions are proposed to facilitate development of neural network expertise within British Rail.