
**Abstract**

Pattern classification and clustering algorithms are key components of modern information processing systems used to perform tasks such as speech and image recognition, printed character recognition, medical diagnosis, fault detection, process control, and financial decision making. A software system named LNKnet has been developed to simplify the task of applying these algorithms in new application areas. LNKnet runs under the UNIX operating system and includes a graphical point-and-click user interface that provides access to over 20 pattern classification, clustering, and feature selection algorithms. The most important algorithms from the fields of neural networks, statistics, machine learning, and artificial intelligence are provided. They can be trained and tested on separate data or tested using automatic cross-validation. Graphical outputs include 2D scatter and decision region plots and 1D plots of data histograms, classifier outputs, and error rates during training. Parameters of trained classifiers are stored in files and can be translated into C programming language source code subroutines that can be embedded in user applications. LNKnet has been used for many applications at MIT Lincoln Laboratory and other research laboratories.