Neural Networks

Neural networks is an area of machine learning that seeks to solve problems in information processing using techniques inspired by biological neural assemblies. This area of AI research has had a rich history, building upon the modeling foundation of early neuroscientists. With the advent of the backpropagation algorithm and improving processor speeds in the early 1990s, the door was opened for a myriad of successful applications using a variety of approaches. Today, neural network applications surround us in areas such as defense, speech processing, handwriting recognition, credit card fraud processing, and numerous areas of manufacturing control and signal analysis. As a machine learning technique, neural networks provide a flexible approach, which can solve problems in both classification and function approximation. A few areas of applications research include pattern recognition, control and process monitoring, biomedical applications, robotics, text mining, diagnostic problems, and financial market prediction. A number of learning or organizational algorithms are employed by modern researchers and include back propagation, RBF, SVM, ensemble methods, and kernel approaches. There is also a rich field of hybrid approaches such as neural networks/genetic algorithms, neural network/expert systems, causal nets trained with backpropagation, and neural network/fuzzy logic. FLAIRS-19 continues the tradition of hosting a neural networks special track to advance the state of research in this area of AI.