

Neural Networks for Clustering Large Data Sets in High Dimensions

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We describe a new neural network architecture called Projective Adaptive Resonance Theory (PART) and present the associated algorithm in order to find clusters for large data sets in high dimensional spaces. The architecture is based on the adaptive resonance theory developed by Carpenter and Grossberg, but a major modification is developed in order to deal with the inherent sparsity of the data in many data-mining applications. We also report comparisons with PROCLUS and other clustering algorithms, together with some discussions about some related problems in dynamical systems.