A Parallel Implementation of a Growing SOM Promoting Independent Neural Networks over Distributed Input Space

John Hammond, Dan Maclean, and Iren Valova

Computer and Information Science Department
University of Massachusetts Dartmouth
North Dartmouth, MA, USA
G_JHammond, G_DMaclean, IValova@UMassD.Edu

***Abstract* — Self-Organizing maps can discover topological and multidimensional patterns using a variety of methods. We apply a parallel algorithm proposed by the authors (ParaSOM), which yields closer and denser approximations than other methods in a fraction of iterations, to a two-dimensional pattern in a parallel environment to demonstrate a high degree of neuron independence. In a second implementation, pieces of a two-dimensional input space are distributed over a network and processed by independent ParaSOM algorithms.**