

Chapter 14¹

Support Vector Machines and Applications

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Abstract: Support Vector Machines (SVMs) methods have become a popular tool for predictive data mining problems and novelty detection. They show good generalization performance on many real-life datasets and they are motivated theoretically through convex programming formulations. There are relatively few free parameters to adjust using cross validation and the architecture of the SVM learning machine does not need to be found by experimentation as in the case of Artificial Neural Networks (ANNs). We discuss the fundamentals of SVMs with emphasis to multiclass classification problems and applications in science, business and engineering.

Key Words: Support vector machines, Kernel, Least squares, Multi-classification, Enterprise, Data mining, Machine learning, Classification, Classifiers.

¹ Liao, T.W. and E. Triantaphyllou, (Eds.), **Recent Advances in Data Mining of Enterprise Data**, *World Scientific*, Singapore, pp. 643-690, 2007.