Support Vector Machine

*I seem to have been only like a boy playing on the seashore, and diverting*

*myself in now and then finding a smoother pebble or a prettier shell than*

*ordinary, whilst the great ocean of truth lay all undiscovered before me.*

**Introduction**

Support vector machines, SVMs, are a machine learning technique, which is based on the Structural Risk Minimization Principle. The purpose of this project is to implement a support vector machine on a personal computer using CVXOPT so that a better understanding of the theory behind SVM can be gained and the report of the project can serve as an introduction of SVM to readers who are not familiar with the subject.

Support Vector Machines are a relatively recent machine learning technique. There are still many unexplored areas and unanswered questions of both theoretical and practical nature in this field. While the basic theory behind SVM is not hard to understand, it does require some knowledge of optimization using Lagrange multipliers as well as basic matrix theory.