



Exercise Sheet 5

complete until Thursday, June 7th

Exercise 1 Play around with the SVM applet on <http://www.csie.ntu.edu.tw/~cjlin/libsvm/>.

Exercise 2 Show that $k(x, y) = (x \cdot y)^3$ can indeed be used as a kernel function for data living in \mathbb{R}^2 by exhibiting a space \mathcal{H} and a mapping $\Phi : \mathbb{R}^2 \rightarrow \mathcal{H}$ such that $k(x, y) = \Phi(x) \cdot \Phi(y)$.

Exercise 3 Justify that $k(x, y) = (x \cdot y)^3$ can be used as a kernel by applying Mercer's theorem.