



Figure 1: (a) Standard C-SVM like penalty function penalizes $y_i g(\mathbf{x}_i) < \rho_1$. In B-SVM, ρ_1 replaces the constant 1 from C-SVM. (b) Novel B-SVM penalty function. This function penalizes $y_i g(\mathbf{x}_i) > \rho_2$. (c) Total penalty function for B-SVM. If $y_i g(\mathbf{x}_i) \in [\rho_1, \rho_2]$ then the total penalty is 0. Choosing $C_2 < C_1$ will impose a milder penalty for values of $y_i g(\mathbf{x}_i) > \rho_2$.