

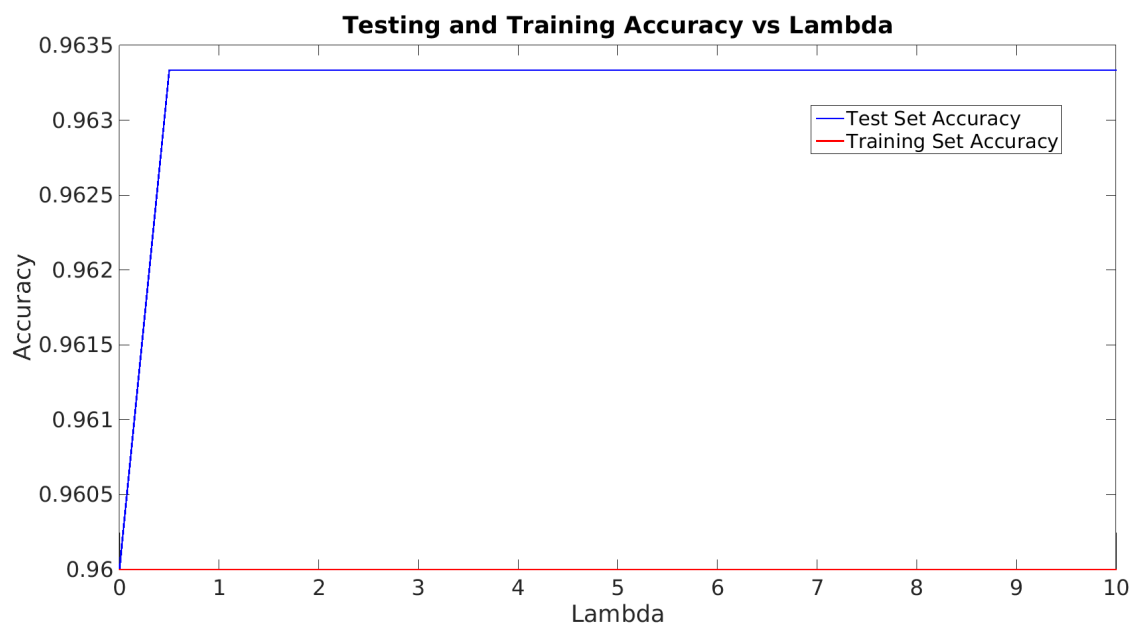
# IE615: Data Analytics for Operations Research

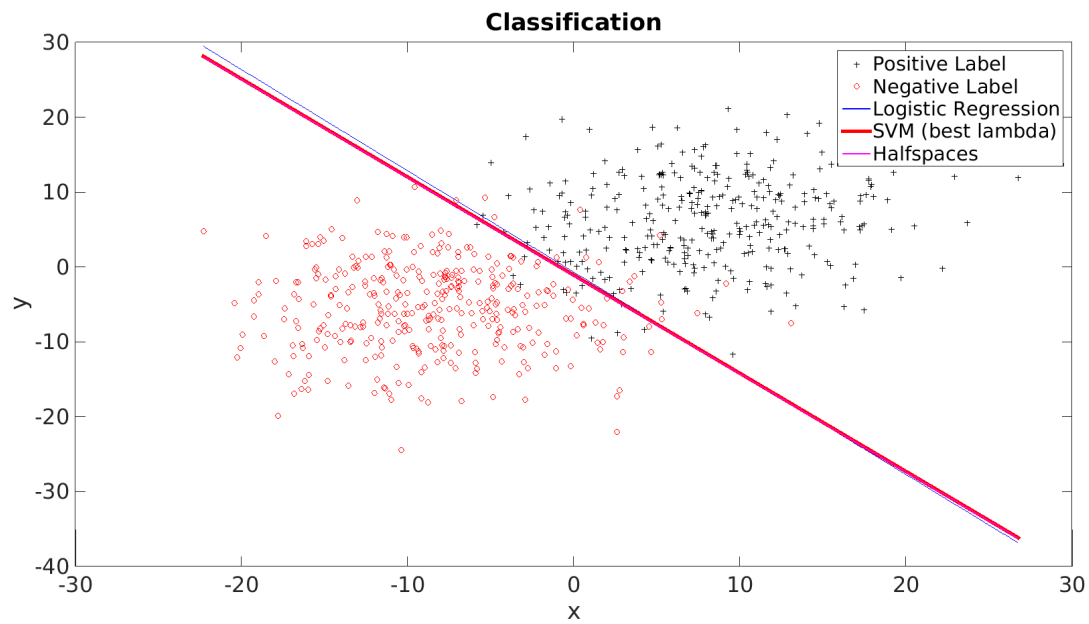
## Assignment 1

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### 1) Classification Problem

Algorithm	(W, b) and $\lambda$	Training Accuracy	Testing Accuracy
Half-spaces	W: (0.3008, 0.2295) b: 0.2561 $\lambda$ : NA	0.9600	0.9600
Logistic Regression	W: (0.4897, 0.3690) b: 0.2480 $\lambda$ : NA	0.9586	0.9633
SVM	W: (0.2992, 0.2283) b: 0.2493 $\lambda$ : 0.5	0.9600	0.9633





*\*\*SVM line is close to Halfspace line due to similarity in objective function*

## 2) Regression Problem

Algorithm	(W, b) and $\epsilon$	Training RMSE	Testing RMSE
Linear Regression	W: 0.115560 0.097911 0.086108 -0.189921 0.142020 0.009812 0.012037 0.107474  b = 0.995501 $\epsilon$ = NA	10.275959	10.621989
SVR ( $\epsilon$ loss)	W: 0.138824 0.124309 0.111942 -0.134987 0.065561 0.023483 0.035550 0.133219  b = -49.965299 $\epsilon$ = 0.3	10.525320	10.507872

