**Before**

Install LIBSVM for MATLAB following the instruction in package.

**Data Set**

Cell\_237.csv, Debris\_237.csv, and Strip\_237.csv

**Script and function for experiment with 600 data**

read\_csv\_file.m – Read CSV file

loading\_data\_600.m – Prepare experimental data

single\_feature\_examination\_600.m – examine each feature parameter

forward\_propagation\_step1\_600.m – the steps for forward propagation approach

forward\_propagation\_step2\_600.m

forward\_propagation\_step3\_600.m

forward\_propagation\_step4\_600.m

forward\_propagation\_step5\_600.m

SVM\_training\_600.m – achieve the classifier after feature selection

forward\_propagation\_scenario\_plot.m – plot scenario line chart

cross\_validation\_5\_folder.m – validation process

**Data Set**

3000\_data.csv

**Script and function for experiment with 3000 data**

loading\_data\_3000.m – Prepare experimental data

single\_feature\_examination\_3000.m – examine each feature parameter

forward\_propagation\_step1\_3000.m – the steps for forward propagation approach

forward\_propagation\_step2\_3000.m

forward\_propagation\_step3\_3000.m

forward\_propagation\_step4\_3000.m

forward\_propagation\_step5\_3000.m

backward\_propagation.m – the step for backward propagation approach

backward\_propagation\_scenario\_plot.m – plot scenario steps

SVM\_training\_3000.m – achieve the classifier after feature selection

cross\_validation\_10\_folder.m – validation process

parameter\_estimate.m – identify the best parameter pair of RBF kernel