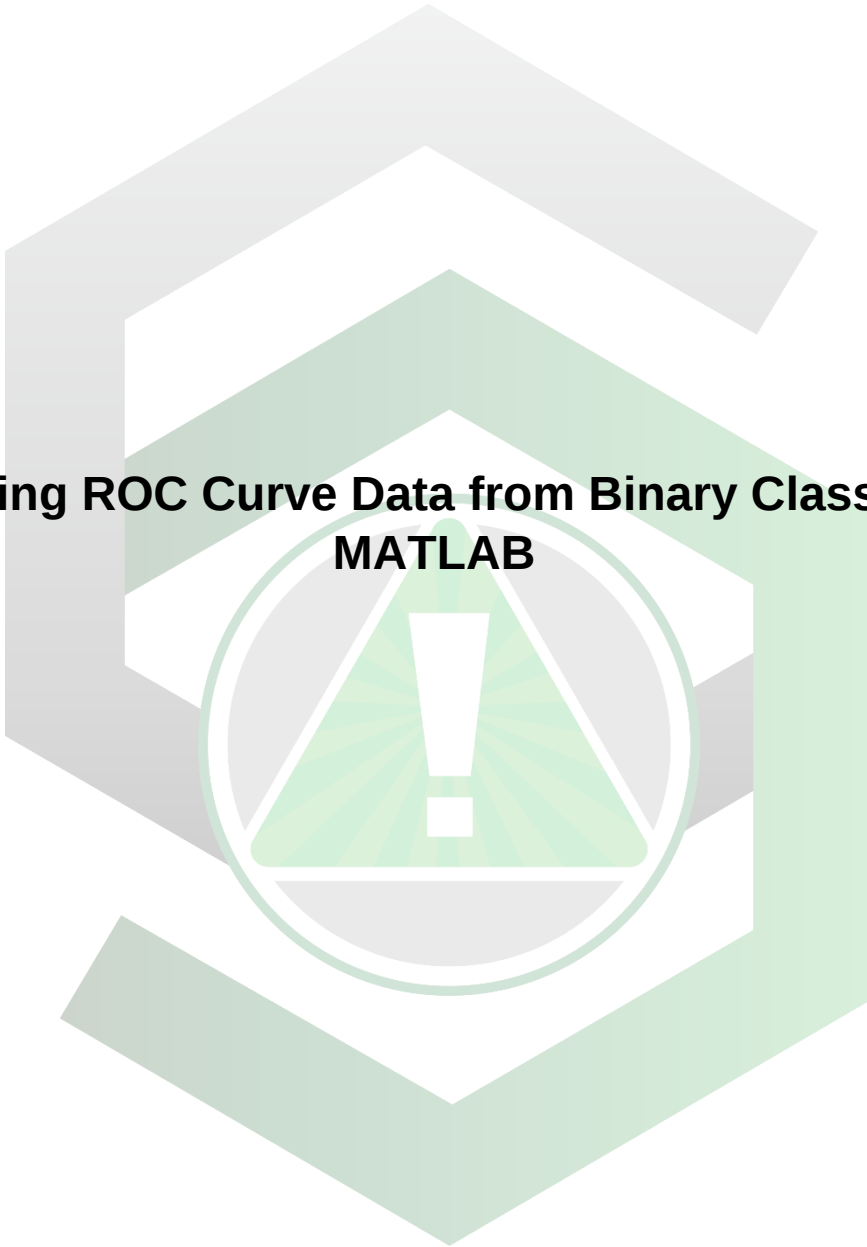


The background of the slide features a large, faint watermark of the MATLAB logo, which consists of two interlocking hexagons, one light gray and one light green. In the center of the logo is a circular emblem containing a green triangle with a white exclamation mark.

Acquiring ROC Curve Data from Binary Classifier in MATLAB

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Effectivity: Oct/25/20	Acquiring ROC Curve Data from Binary Classifier in MATLAB		Revised by:
Revised:			Approved by:

ACQUIRING ROC CURVE DATA FROM BINARY CLASSIFIER IN MATLAB

This SOP uses the “Fisher’s Iris Data Set” from MATLAB course. [Click here](#) to download the dataset or go to the following url <http://ucl-cs-grad.github.io/matlabgrad/data/fisheriris.mat>.

This SOP uses the versicolor and virginica samples as well as the dummy variable results from the “Plot ROC Curve for Classification by Logistic Regression” tutorial. [Click here](#) to see the MATLAB tutorial or go to the following url <https://la.mathworks.com/help/stats/perfcurve.html?lang=en#bunsory-2>.

The labels and scores results are given at the Appendix section of the SOP.

	Create text file (.txt) with Notepad.
	Paste predicted dummy variable results from the used classifier.
	Save text file as “scores.txt” in desktop by going to File → Save As...
	Create text file (.txt) with Notepad using the shortcut “Ctrl + N”.
	Paste class label for each sample.
	Save text file as “labels.txt” in desktop by going to File → Save As...
	Open MATLAB program.
	Click on the “Browse for folder” button.
	Select “Desktop” as the folder.
	Click “Select Folder” button.
	Write “labels=importdata(‘labels.txt’);” in the command window.
	Press Enter to import the data in the labels.txt text file in the MATLAB workspace.
	Write “scores=importdata(‘scores.txt’);” in the command window.
	Press Enter to import the data in the scores.txt text file in the MATLAB workspace.
	Write “[X,Y,T,AUC]=perfcurve(labels,scores,’versicolor’);” in the command window
	Press Enter to give Area Under the Curve (AUC) value of the ROC curve, threshold values (T) used, False Positive Rate (X) values, True Positive Rate (Y) values when evaluating the “versicolor” class.
	Write “plot(X,Y)” in the command window.
	Press Enter to graph ROC curve for the “versicolor” class.
	Write “[X,Y,T,AUC]=perfcurve(labels,scores,’virginica’);” in the command window
	Press Enter to give Area Under the Curve (AUC) value of the ROC curve, threshold values (T) used, False Positive Rate (X) values, True Positive Rate (Y) values when evaluating the “virginica” class.
	Write “plot(X,Y)” in the command window.

Press Enter to graph ROC curve for the “virginica” class.

Appendix Section

Dummy variable scores for versicolor and virginica samples. All the values are for only one column, it is divided into 10 columns to save up space in the SOP.

0.827142	0.061524	0.371192	0.166341	0.177869	0.568151	0.648925	0.79823	0.897025	0.721985
0.60446	0.352507	0.423482	0.166341	0.443354	0.285025	0.555212	0.221029	0.971264	0.791634
0.791634	0.32267	0.487648	0.285025	0.27685	0.842216	0.751028	0.939078	0.565181	0.285025
0.160805	0.433391	0.423482	0.368374	0.068918	0.528082	0.233108	0.507878	0.517987	0.765851
0.611223	0.228074	0.575099	0.173758	0.21414	0.630273	0.293342	0.737934	0.403855	0.737934
0.255509	0.721985	0.673405	0.436363	0.271206	0.932516	0.60446	0.875008	0.943547	0.71379
0.568151	0.235277	0.735589	0.721985	0.263282	0.062226	0.630273	0.47047	0.578051	0.487648
0.059906	0.285025	0.71379	0.467459	0.480562	0.882345	0.958512	0.443354	0.594745	0.630273
0.664443	0.410705	0.387397	0.235277	0.088486	0.67074	0.93428	0.565181	0.397043	0.531094
0.112936	0.200836	0.24042	0.172029	0.255509	0.891663	0.32267	0.865885	0.791634	0.352507

Dummy variable scores for versicolor and virginica samples. All the values are for only one column, it is divided into 10 columns to save up space in the SOP.

versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica
versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica
versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica
versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica
versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica
versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica
versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica
versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica
versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica
versicolor	versicolor	versicolor	versicolor	versicolor	virginica	virginica	virginica	virginica	virginica

Advisor Signature

Co-Advisor Signature