

# MATLAB 7 ONLINE-SVR REFERENCE MANUAL

RETURN	METHOD NAME	PARAMETERS	DESCRIPTION
<b>INITIALIZATION</b>			
	OnlineSVR		New OnlineSVR
<b>ATTRIBUTES</b>			
	C		<i>C</i> parameter
	Epsilon		<i>Epsilon</i> parameter
	KernelType		<i>KernelType</i> parameter (‘Linear’, ‘Polynomial’, ‘RBF’, ‘GaussianRBF’, ‘ExponentialRBF’, ‘MLP’)
	KernelParam		<i>KernelParam</i> parameter
	KernelParam2		<i>KernelParam2</i> parameter
	Verbosity		Level of verbosity of messages 0: no messages 1: training informations 2: training details 3: debug informations
	StabilizedLearning		Stabilize weights after training
	ShowPlots		Show plots during training
	MakeVideo		Make a video of training
	VideoTitle		Video title
	FramesNumber		Number of frames of the video
<b>LEARNING OPERATIONS</b>			
[SVR, Flops]	Train	NewSamplesX NewSamplesY	Train OnlineSVT with NewSamples
[SVR, Flops]	Forget	Indexes	Forget samples Indexes
[SVR, Flops]	Stabilize		Stabilize the weights until KKT conditions are verified
<b>PREDICT / MARGIN OPERATIONS</b>			
[PredictedValues]	Predict	SampleSetX	Predict the Y values
[MarginValues]s	Margin	SampleSetX SampleSetY	Find the margin (f(x)-y)
<b>CONTROL OPERATIONS</b>			
[true/false]	VerifyKKTConditions		Check if KKT conditions are verified in current OnlineSVR
<b>INPUT / OUTPUT OPERATIONS</b>			
	ShowSetsInformations		Show OnlineSVR’s details
<b>PLOT / VIDEO OPERATIONS</b>			
	BuildPlot		Build plot of current OnlineSVR
<b>I/O OPERATIONS</b>			
	ShowInfo		Show info about OnlineSVR
	ShowDetails		Show details about OnlineSVR

# MATLAB ONLINE-SVR EXAMPLES

```
% Initializations
clear all;
close all;
clear classes;

% Build the OnlineSVR
SVR = OnlineSVR;

% Set Parameters
SVR.C = 10;
SVR.Epsilon = 0.1;
SVR.KernelType = 'RBF';
SVR.KernelParam = 30;
SVR.AutoErrorTolerance = true;
SVR.Verbosity = 1;
SVR.StabilizedLearning = true;
SVR.ShowPlots = 1;
SVR.MakeVideo = false;
SVR.VideoTitle = '';

% Build Training set
TrainingSetX = rand(20,1);
TrainingSetY = sin(TrainingSetX*pi*2);

% Training
SVR = SVR.Train(TrainingSetX,TrainingSetY);

% Show Info
SVR.ShowInfo;

% Predict some values
TestSetX = [0; 1];
TestSetY = sin(TestSetX*pi*2);
PredictedY = SVR.Predict(TestSetX);
Errors = SVR.Margin(TestSetX,TestSetY);
disp(' ');
disp('Some results:');
disp(['f(0)= ' num2str(PredictedY(1)) '      y(0)= ' num2str(TestSetY(1)) '
margin=' num2str(Errors(1))]);
disp(['f(1)= ' num2str(PredictedY(2)) '      y(1)= ' num2str(TestSetY(2)) '
margin=' num2str(Errors(2))]);
disp(' ');

% Forget first 4 samples
SVR = SVR.Forget(1:4);

% Build plot
SVR.BuildPlot;
```