

		_				
0.1						
01	Controller - holder : CsvHolder					
	nn : NeuralNet					
01	tfn : TensorFlowNeuralNet					
01	+GetImageWithIndex(index : int, imageSize : int) : Bitmap +GetAllIndexesWithLabel(label : int) : NDArray					
	+GetHistogramOf(imgIndex : int) : NDArray					
	+LoadTensorflow(): void +MakePredictionTff(img: NDArray): NDArray					
	+MakePrediction(img : NDArray) : List <ndarray></ndarray>					
	+MakePredictionTf(adx:int): NDArray					
	+MakePrediction(adx : int) : NDArray					
	01					
CsvHolder						
+TrainingSetPath: conts string = "//assets/mnist_csv/mnist_train.csv"						
+TestSetPath : conts string =//assets/mnist_csv/mnist_test.csv" - trainingSet : NDArray						
indexedTrainingSet : NDArray						
testSet : NDArray - indexedTestSet : NDArray						
+LoadTrainingSet(): void						
+LoadTestSet(): void						
-LoadSet(path : string) NDArray +GetHistogramOf(ImgIndex : int) : NDarray						

-IndexLabels(matrix : NDarray) : NDArray +GetImage(Index : int, ImgSize : int) : BitMap +Comp

-\_weigl -\_biase

+Neura

+Make +Make

+BackF

+SumF

+Train(

+PrintV

-layers

-model

-x\_trair

-y\_trair -x\_test

-y\_test.

+Tenso

+Makel

+Prepa

+Prepa +BuildN

+Comp

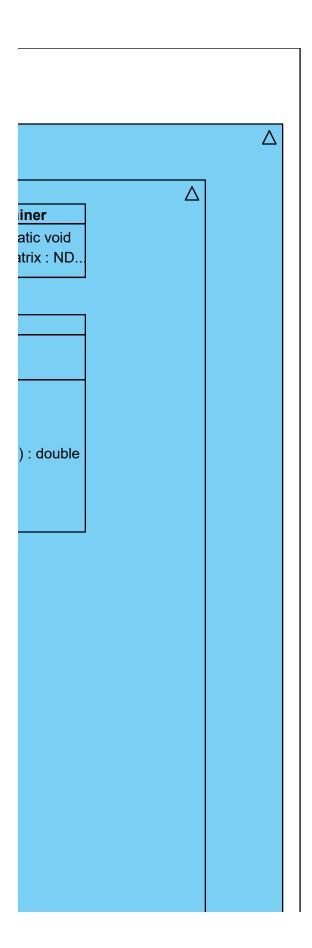
-Train()

Page 3 of 10

## Modeld NeuralNet **ActivationFuntion NnTra** uteSigmoid(matrix : NDArray) : NDArray +Train(): st +Shuffle(ma **NeuralNet** nts: List<NDArray> s : List<NDArray> ilNet() Prediction(X : NDArray) : List<NDArray> Prediction2(X: NDArray, forPrediction: bool = false): List<NDArray> Propagation(X : NDArray, forwardResults : NDArray, expectedY : NDArray, noExamples : double lorizontal(matrix : NDArray) : NDArray data: NDArray, labels: NDArray): double VB(): void **TensorFlowNeuralNet** : LayersApi : Model i: NDArray i: NDArray : NDArray : NDArray orFlowNeuralNet() Prediction(adx: int) reModel(): void reData(): void Model(): void

ileModel(): void

): void



```
+viewChartsBut_Click(sender : object, e : EventAr...

+nextBut_Click(sender : object, e : EventArgs) : void

+prevBut_Click(sender : object, e : EventArgs) : void

-actualizeLabel() : void

-checkIdx() : void
```

-panel\_MouseDown(sender : object, e : MouseEventArgs)
-panel\_MouseMove(sender : object, e : MouseEventArgs)
-ClearBut\_Click(sender : object, e : EventArgs)

+GetImage(Index : int, ImgSize : int) : BitMap
+GenerateImage(alphas : NDArray, imgSize : int) : BitMap
+GetAllIndexesWithLabel(label : int) : NDArray
+ScaleImage(bmp : BitMap, maxWidth : int, maxHeight : int) : BitMap
+TrainingSet() : NDArray
+TestSet() : NDArray

