

AI in BME – MATLAB Function Summary

Function	Description
MATLAB Bootcamp	
readtable	Import table from file
readmatrix	Import array from file
summary	Print summary of table
size	Size of object
length	Length of object
mean	Mean value of array
median	Median value of array
nanmean	Mean value of array, ignoring NaN values
nanmedian	Median value of array, ignoring NaN values
range	Difference between maximum and minimum values of data
table2array	Convert table to array
array2table	Convert array to table
mat2str	Convert numeric matrix to character vector
isnan	Determine which elements in array are NaN
rmmissing	Remove missing values from array or table
find	Find indices of specified values in data
sort	Sort array elements (default: ascending order)
isoutlier	Identify outliers in array
intersect	Finds the overlap, or common data, between two lists of numbers or strings
regexp	Finds substrings which match the specific expression/pattern
isempty	Determines whether array is empty
writetable	Write table to file
writematrix	Write matrix to file
head	Get top rows of table (default: top 8 rows)
tail	Get bottom rows of table (default: last 8 rows)
nnz	Number of non-zero elements in matrix
numel	Number of elements in array
whos	View details of variables in active workspace
sparse	Create sparse matrix
full	Convert sparse matrix into full matrix
Plotting in MATLAB	
plot	2-D line plot
xlabel, ylabel	Label x- and y-axes
title	Create plot title
loglog	Log-log scale plot

bar	Bar graph
categorical	Create categorical array from unique values of input
reordercats	Reorder categories in categorical array
sum	Sum of elements in array
pie	Pie chart
legend	Add legend to plot
histogram	Histogram plot
hold on	Keep current plot when adding new plot (use <i>hold off</i> when done)
boxplot	Box plot
scatter	Scatter plot
lsline	Add least-squares line to scatter plot
corr	Find correlation (linear or rank)
gscatter	Scatter plot separated by group

Statistical Analysis

maxk	Find k largest elements of array
heatmap	Heatmap chart
gplotmatrix	Matrix of scatterplots
regress	Create multiple linear regression model
ones	Array of ones
subplot	Create an mxn grid of plots
text	Add text labels to data points in plot
min	Find minimum value in array
maxk	Find maximum value in array
fitlm	Create linear regression model
mnrfit	Create multinomial logistic regression model
mnrval	Predicted probabilities for specific logistic regression model
polyfit	Create polynomial curve of degree n
linspace	Create linearly spaced vector
polyval	Evaluate polynomial model at specified points

Model Testing and Validation

open	Open file
predict	Predict responses of linear regression model
abs	Absolute value
sqrt	Square root
randperm	Random permutation of integers from 1 to n without repeating elements
crossvalind	Generate cross-validation indices
zeros	Array of zeros
round	Round to nearest decimal or integer

confusionchart	Generate confusion matrix chart for classification problem
zscore	Returns z-score of each element
pdist	Returns Euclidean distance between pairs of observations