AI in BME – MATLAB Function Summary

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| 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, ignorning 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 |
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| **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 *hold off* 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 |
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| **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 |
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| **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 |