

The repository contains three MATLAB files, MATLAB version 2024b. The functionality features are explained below:

- **MCS_code.m** – This code uses given parameter values to generate Monte Carlo Simulation (MCS) data for randomised investment and interest returns. The outputs are respectively presented in files ‘investment_growth.xls’ and annual_returns.xls’. The code can be used to generate any number of MCS data for different sets of parameter values (lines 5-8). The inputs are drawn from the SMEs and simulated to clone their behavioral data.
- **rank_NN.m** – Since original company data cannot be disclosed due to copyright (IP) protection, MSExcel simulation was used to perturb the original data around its mean and within 2 standard deviations, inputs drawn from a normal distribution. Such data, e.g. **Dataset6.xlsx** (discussed later) is used as an input to this code. This MATLAB code (rank_NN.m) uses a FeedForward Neural Network to rank variables from the given dataset (e.g. Dataset6.xlsx) for which the first 5 columns represent dependent variables and the last 16 columns represent independent variables defining the first 5 columns. Display relative contributions in percentages in descending order and save the output as an xls file.
- **rank_using_random_forest.m** – Using a reordered version of Dataset6.xlsx (e.g. Dataset2_RF.xlsx) as input, where both datafiles are identical apart from a reordering of columns based on company inputs on prioritized variables, this Matlab code uses random forest to rank variables from a dataset for which the first 5 columns represent dependent variables and the last 16 columns represent independent variables (reordered from Dataset6.xlsx). The relative contributions are displayed in percentages in descending order and saved as an xls file (together with plots). The code first ranks the top 5 dependent variables and then ranks the top 5 independent variables for each of these 5 dependent variables.

The repository also contains a pair of datasets, respectively for feedforward neural network evaluation (rank_NN.m) and random forest-based evaluation (rank_using_random_forest.m). The former set of data are housed under subfolder ‘NN DATASETS’ while the latter set are under subfolder ‘RF DATASETS’. The data itself is generated from the original (not disclosable due to copyright protection) datafile using Monte Carlo Simulation using the $\text{NORM.INV}(\text{RAND}())$ operation. Details below:

- **NN DATASETS** – Contains 6 sets of datafiles, each containing 21 columns of which the first 5 columns represent dependent variables followed by 16 columns representing the independent variables. Each of the 5 dependent variables are functions of these 16 independent variables. The datafiles themselves have been generated from the original dataset (undisclosed due to copyright) using Monte Carlo simulation. These datasets are used for recurrent neural network evaluation.
- **RF DATASETS** – Contains 6 sets of datafiles, each containing 21 columns of which the first 5 columns represent dependent variables followed by 16 columns representing the independent variables. Each of the 5 dependent variables are functions of these 16 independent variables. The datafiles themselves have been generated from the original dataset (undisclosed due to copyright) using Monte Carlo simulation. These datasets are used for random forest evaluation.