Graphical Interface for Wind Turbine Data Visualisation

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Introduction

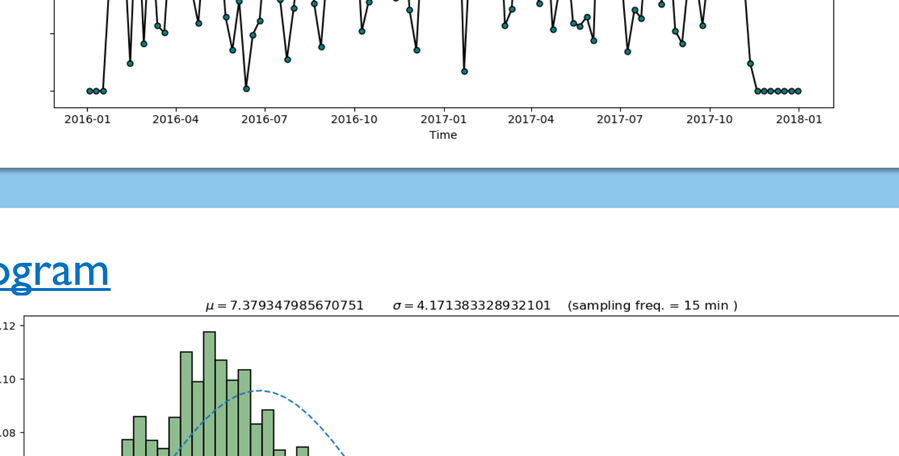
- Aim was to write a graphical user interface that can simplify the process of visualising big sets of raw operational data
- This type of data visualisation is useful in predicting failures and remaining useful life of wind turbines
- Knowledge of coding is not necesarry - app can be utilised by people from different backgrounds
- The application inputs a data file as a *.csv* or *.xlsx* and lets user visualise big sets of raw turbine data as time series, scatter plot and histogram.
- User-friendly: flexibility to modify, resample and export the dataset.

Application Overview

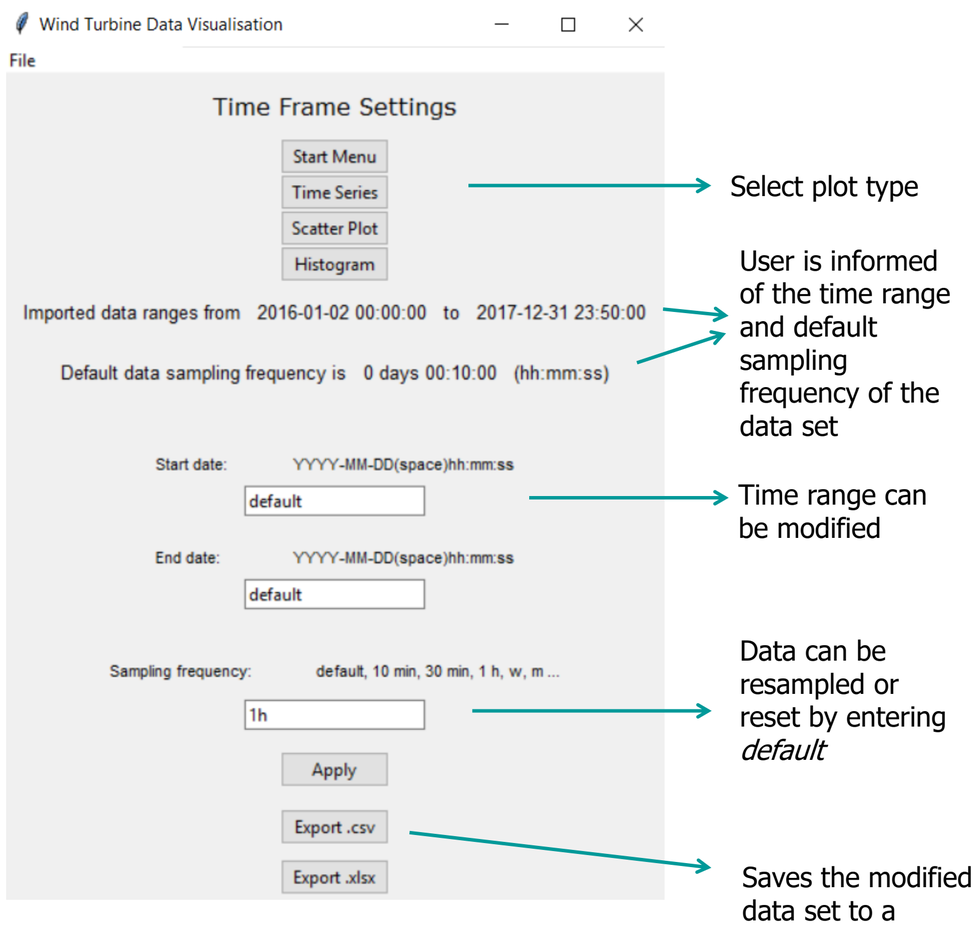
- Software used: Python 3.7, Anaconda, Tkinter, Matplotlib, Pandas, NumPy
- Functionalities:
  - Upload a .csv or .xslx file
  - Input any timestamp format
  - Pop-up window notifies the user about wrong input
  - Plot Time Series, Scatter Plot, Histogram
  - Zoom/Edit/Export graphs via toolbar
  - Change data range (Start/End date)
  - Change sampling frequency
  - Export the edited file as .csv or .xlsx
  - Compiled as .exe, so the application is „frozen in time"
  - Does not require Anaconda or Python to run

Uploading a file

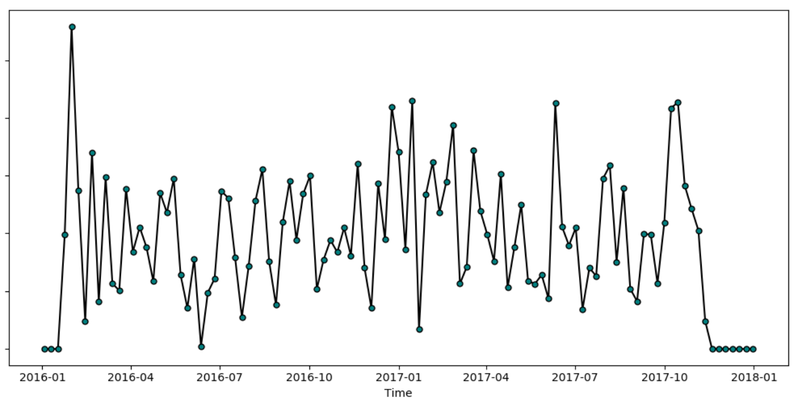
- User inputs Timestamp format and name of the Index Column



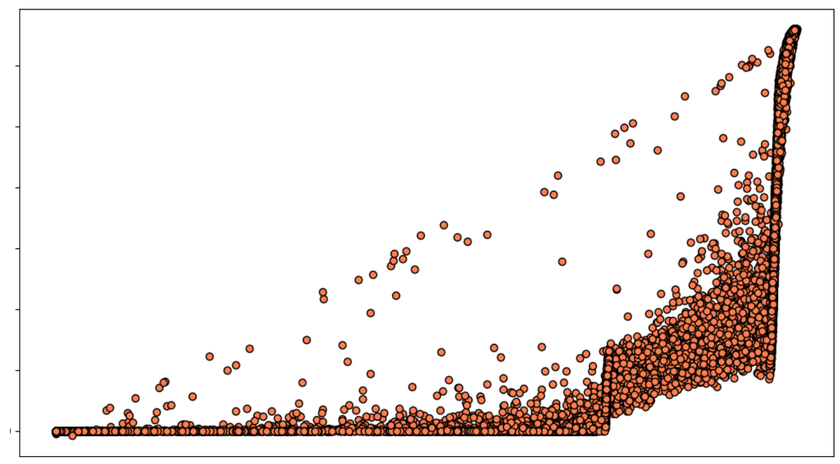
Dataset modification



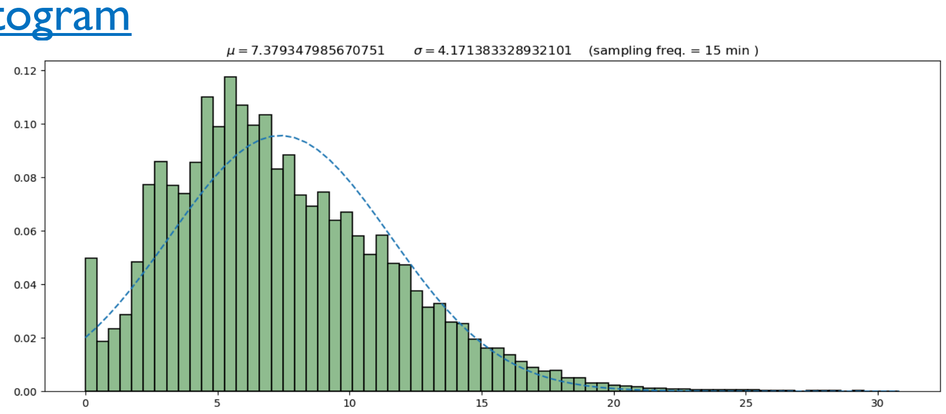
Time Series



Scatter Plot



Histogram



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