

# Graphical Interface for Wind Turbine Data Visualisation

Kim Janovski Supervisors: Sofia Koukoura, Alan Turnbull

Wind & Marine Energy Systems CDT, Rm 3.36, Royal College Building University of Strathclyde, 204 George Street, Glasgow, G1 IXW

kim.janovski@gmail.com



### Introduction

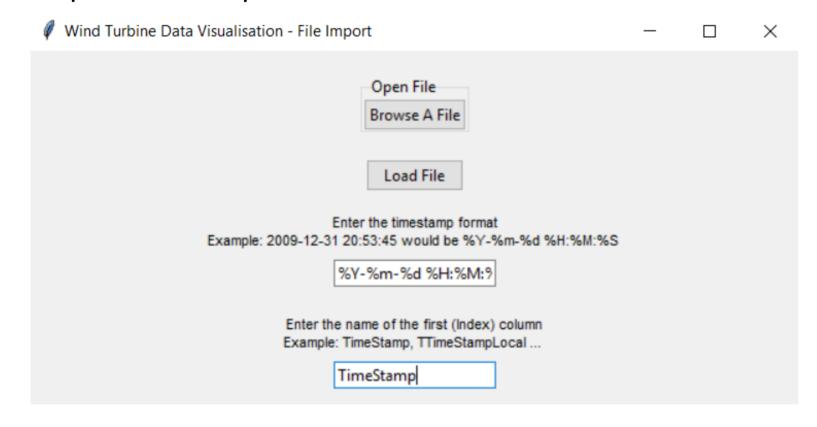
- Aim was to write a graphical user interface that can simplify the process of visualising big sets of raw operational data
- This type of data visualisation is useful in predicting failures and remaining useful life of wind turbines
- Knowledge of coding is not necesarry app can be utilised by people 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**

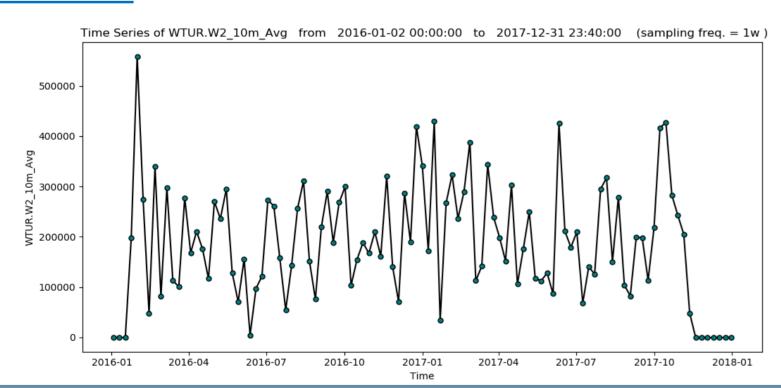
- Software used: Python 3.7, Anaconda, Tkinter, Matplotlib, Pandas, NumPy
- Functionalities:
  - Upload a .csv or .xslx file
  - Input any timestamp format
  - Pop-up window notifies the user about wrong input
  - Plot Time Series, Scatter Plot, Histogram
  - Zoom/Edit/Export graphs via toolbar
  - Change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

## Uploading a file

• User inputs Timestamp format and name of the Index Column

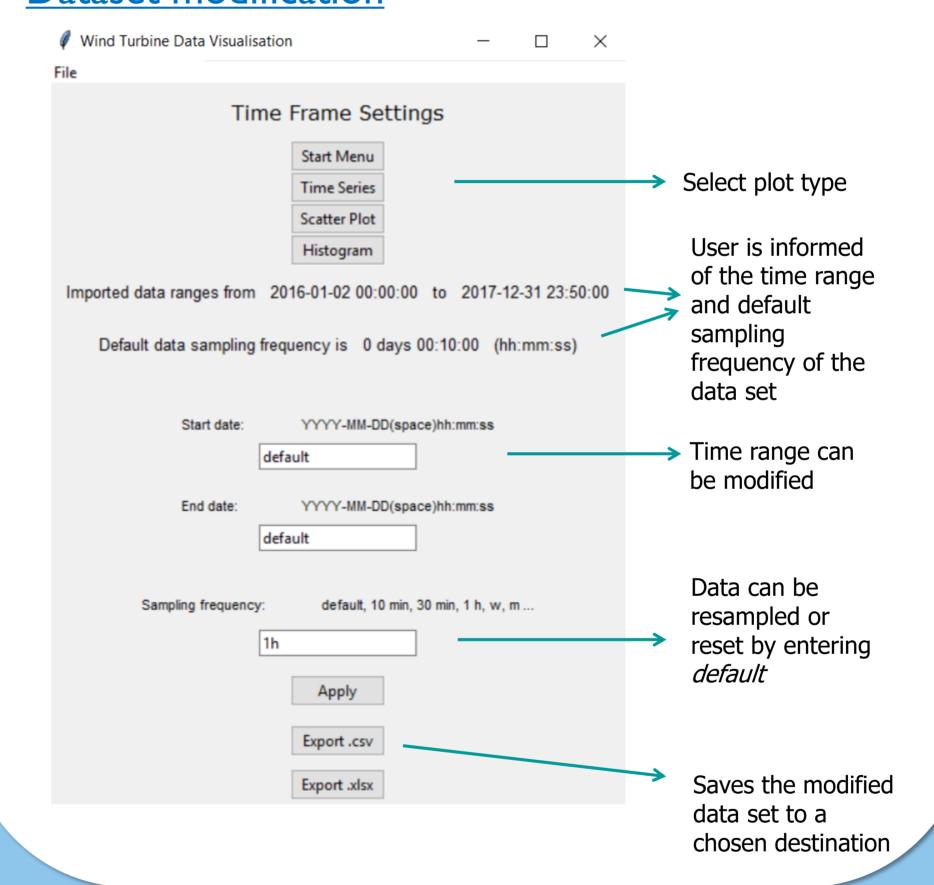


#### Time Series



# Histogram $\mu = 7.379347985670751 \quad \sigma = 4.171383328932101 \quad \text{(sampling freq. = 15 min.)}$

## Dataset modification



# Scatter Plot

