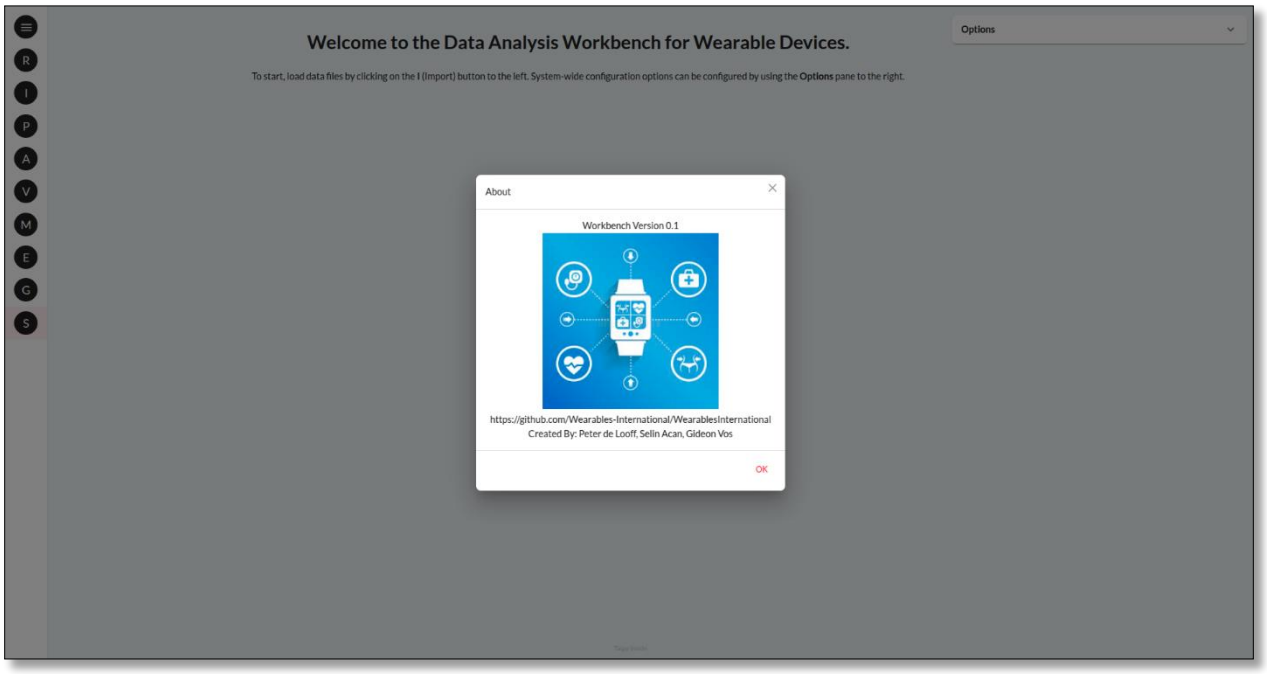
Wearables International Web UI Quick Start Guide

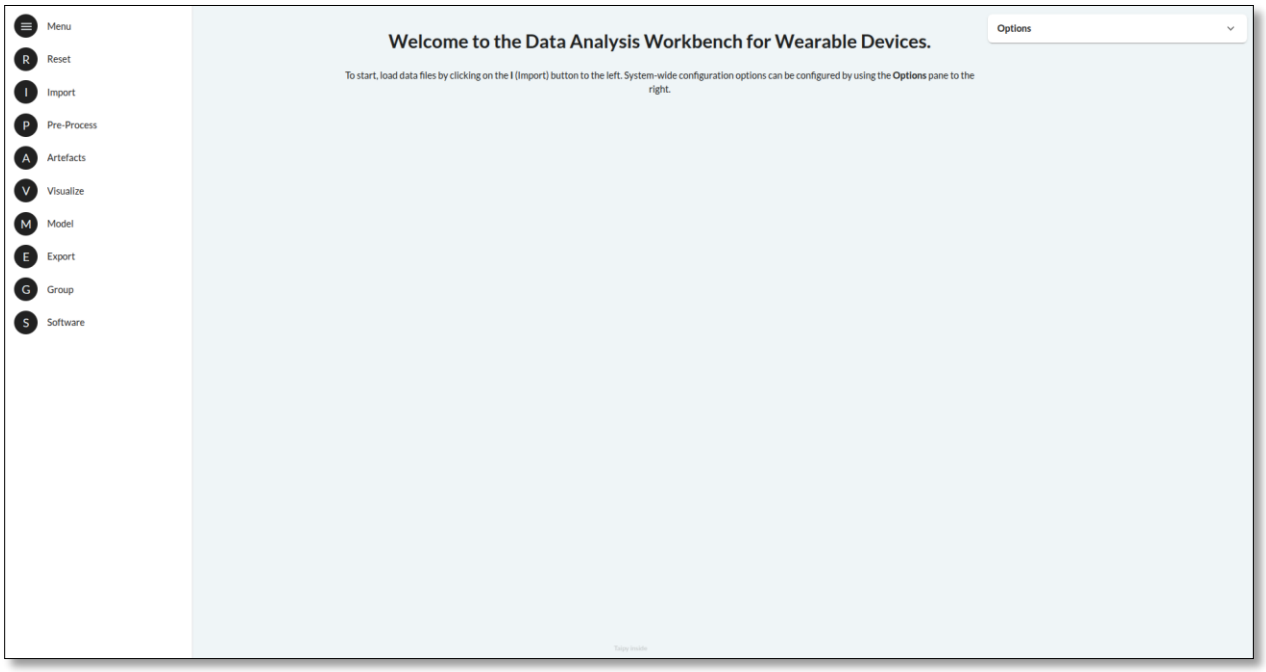
Updated 21 February 2025

Start the Web UI by running the command "***python wearables.py***" from within the **WearablesInternational\WUI** folder. The main startup screen will appear as shown.

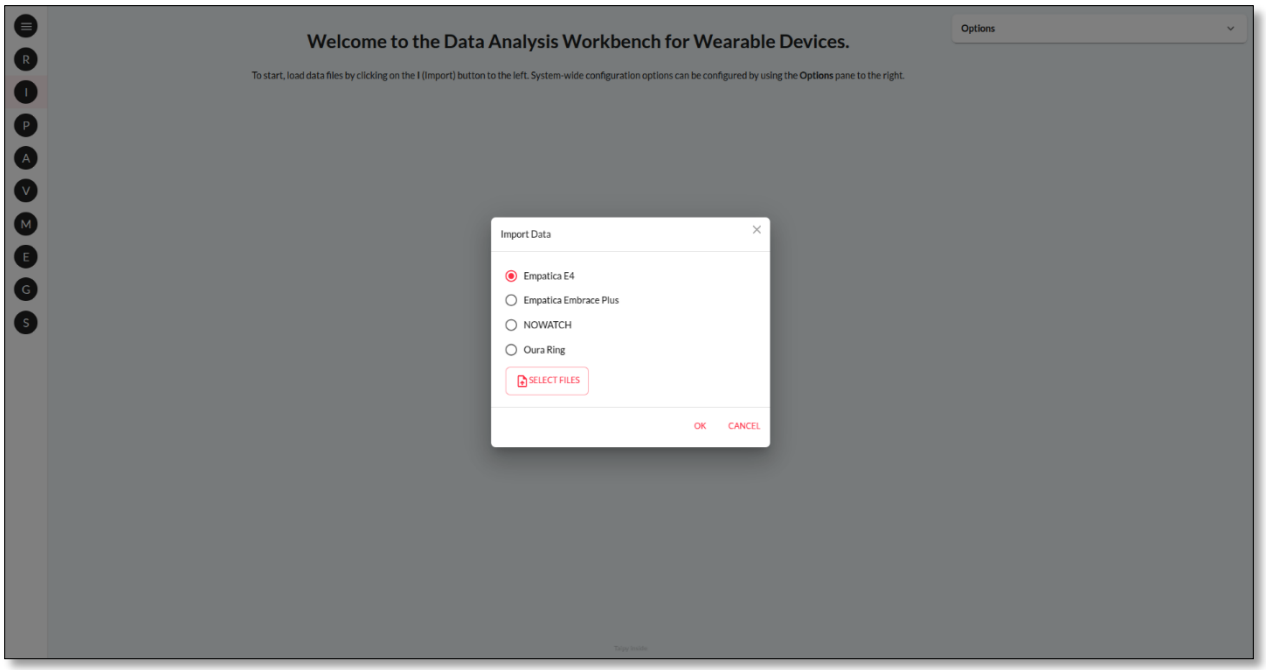


The splash image can be substituted with your preferred institution logo by replacing the **splash.jpeg** file located in the main **WearablesInternational\WUI** folder. Click the **OK** button to continue.

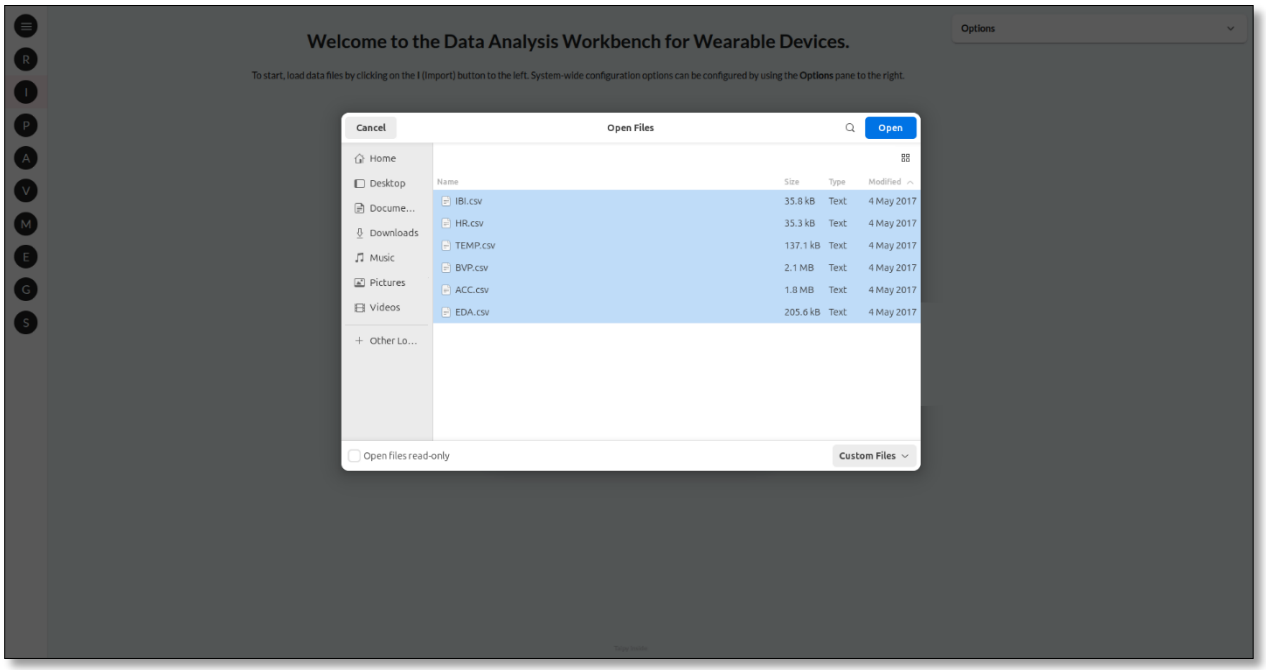
Notice the main menu to the left which can be expanded by clicking on the top hamburger icon.



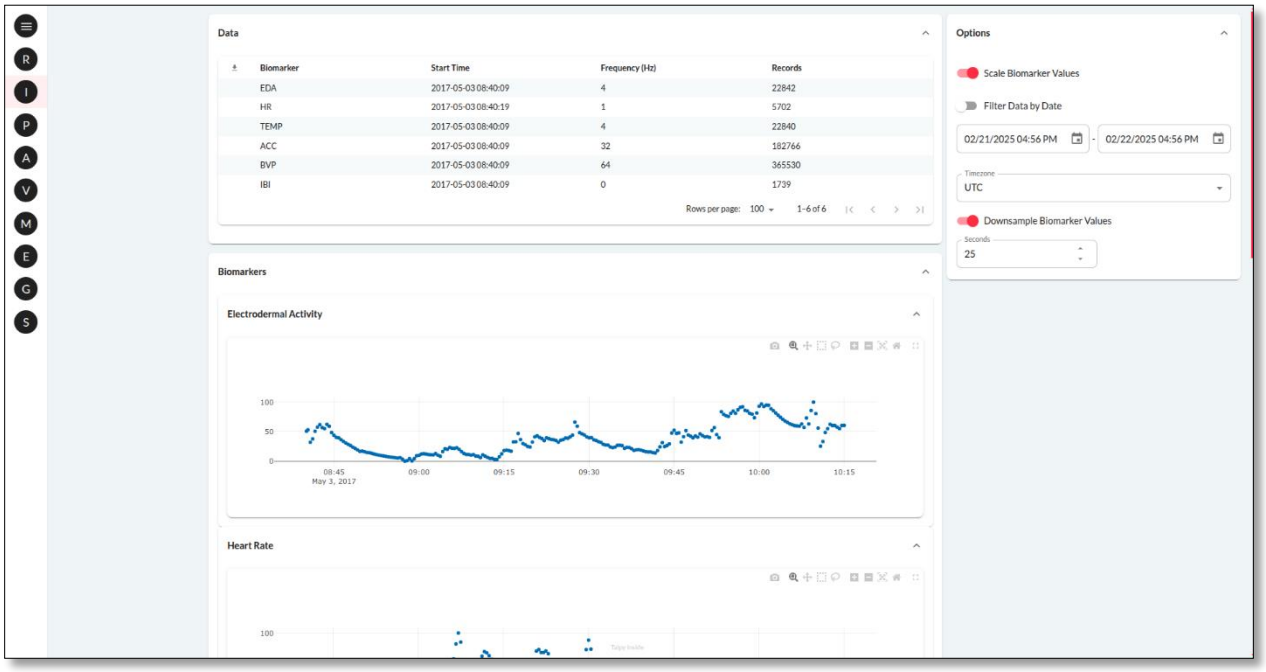
Click on the **Import** menu item. The dialog will allow for importing of all supported device types and their supported file formats include **CSV**, **TXT** and **AVRO**. Select the required device and click on the **Select Files** button to select the file(s) to import.



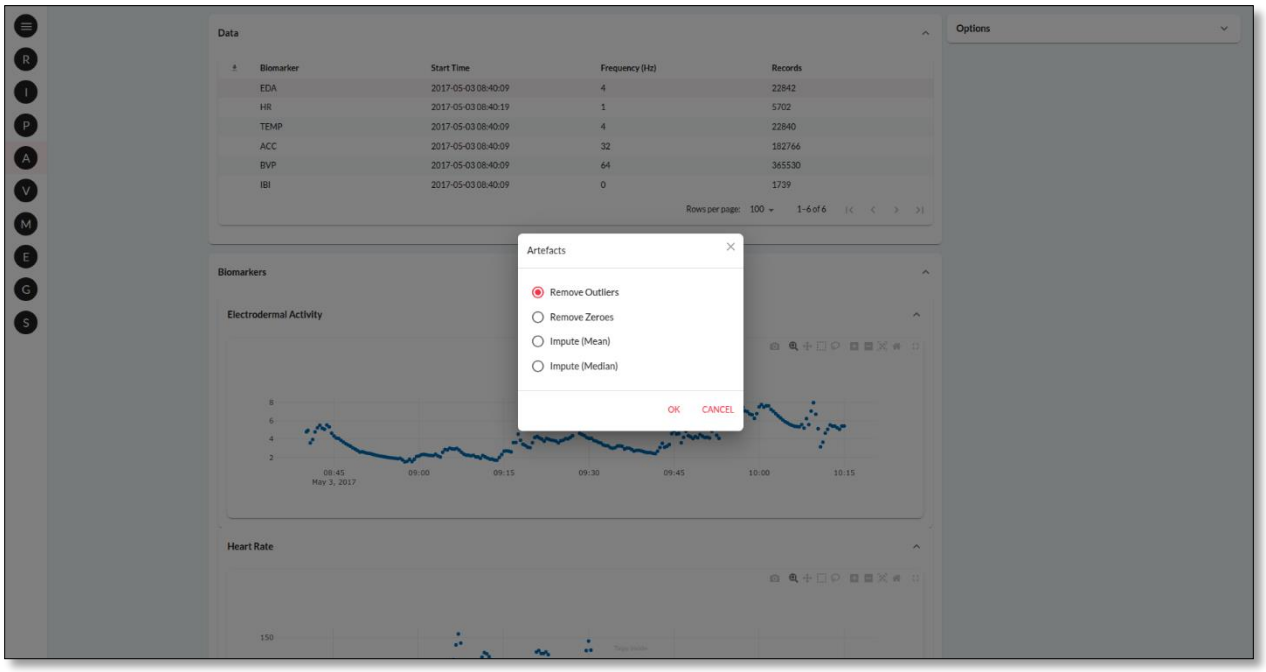
Select the file(s) to be imported and click on the **Open** button. Importation can take from a few seconds to several minutes depending on the number of files and individual file sizes. To reduce processing time, all files are down sampled by default. This option can be changed from the **Options** menu to the right prior to importing files.



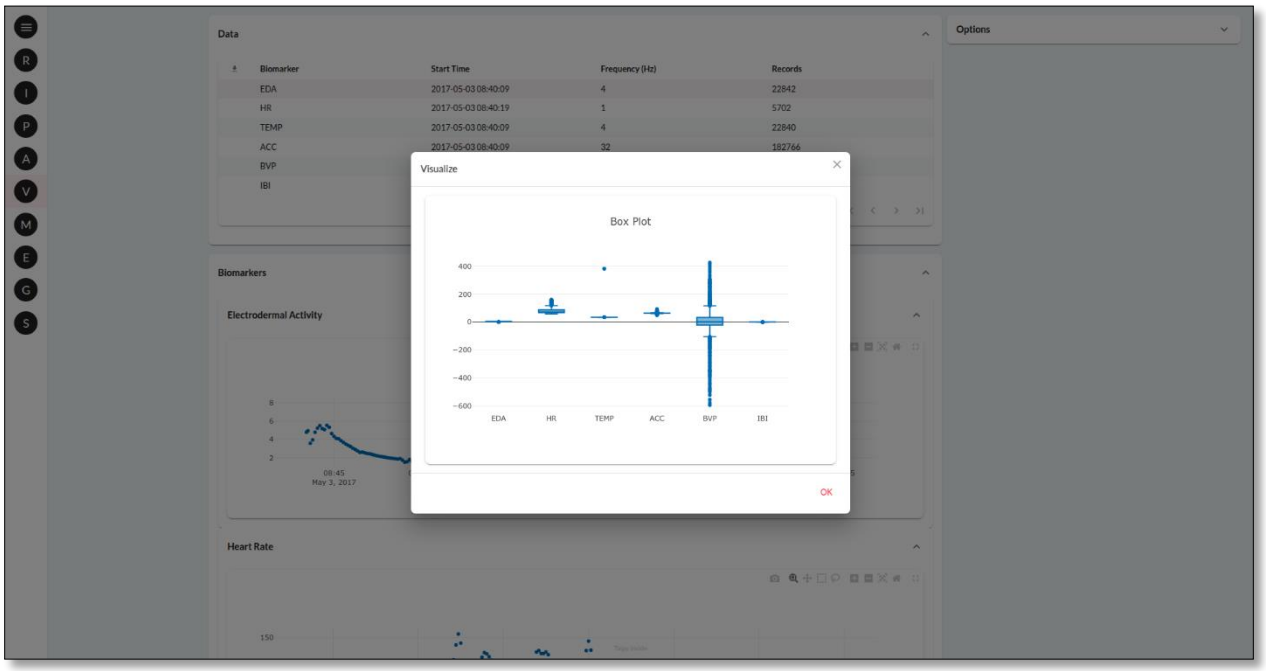
Once all selected files have been imported, the applicable biomarkers will be plotted into individual sections as shown. Sections can be collapsed or expanded by clicking on the individual expand/collapse icons located to the right of each biomarker section. Each biomarker section displays a time series plot of biomarker values. Note that all biomarkers are scaled between 0 and 100. This can be disabled by de-selecting the **Scale Biomarker Values** options from the **Options** menu. Biomarker date and time ranges can be restricted through date filtering from the **Options** menu. Each biomarker plot contains a tool menu to enable downloading the plot as an image or to select sections within the plot to zoom and analyze.



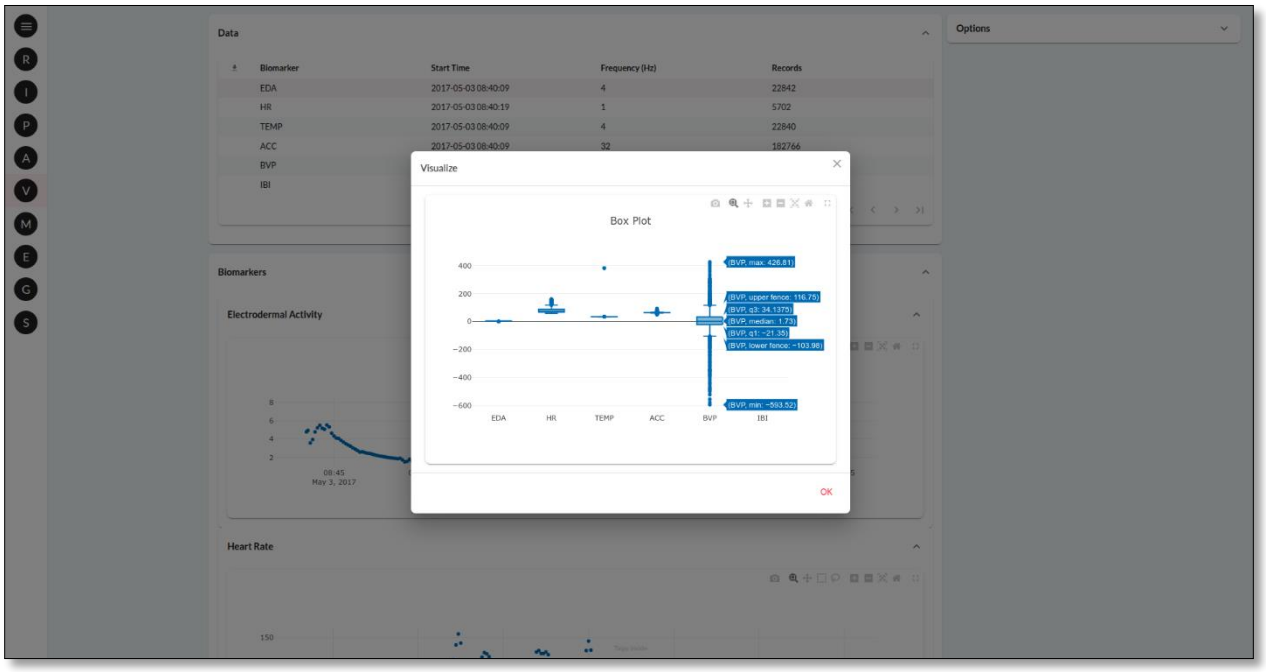
Pre-processing can be performed on each individual biomarker by first selecting the biomarker from the top table and clicking on the Pre-processing menu item. Select the required method from the dialog and click on the **OK** button to perform the selected operation.



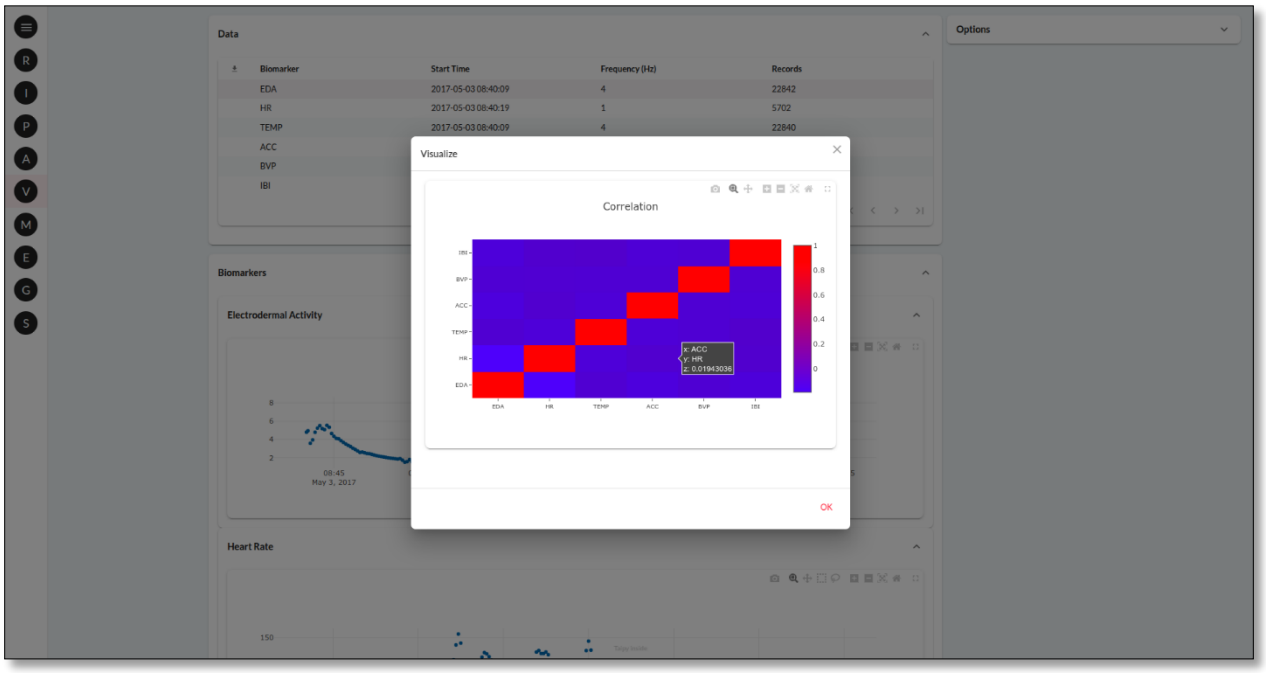
Several visualizations are available per biomarker or across all biomarkers. Click on the **Visualizations** menu item and select the required visualization technique and click **OK** to create the plot as shown below. Note that the **Report** menu item requires the installation of an Open-AI API key prior to running the application.



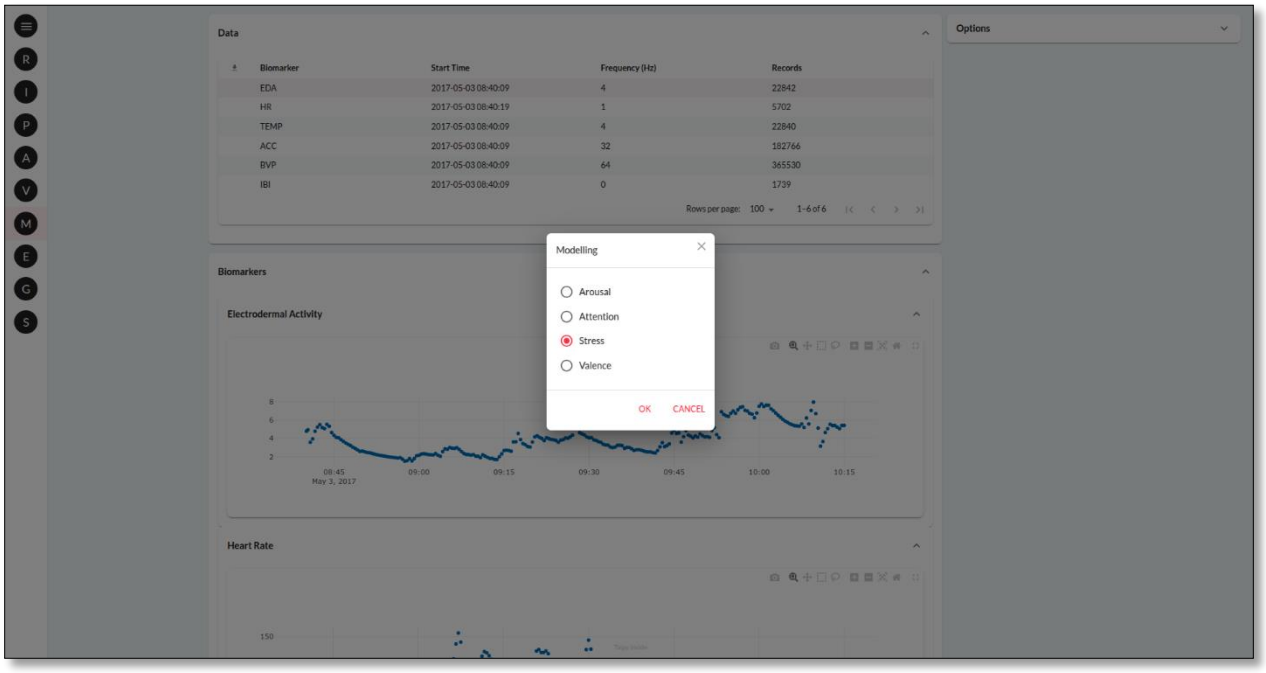
Visualizations allow selection, zoom and image export functionality. Hovering over plot items will display descriptive statistics as shown below.

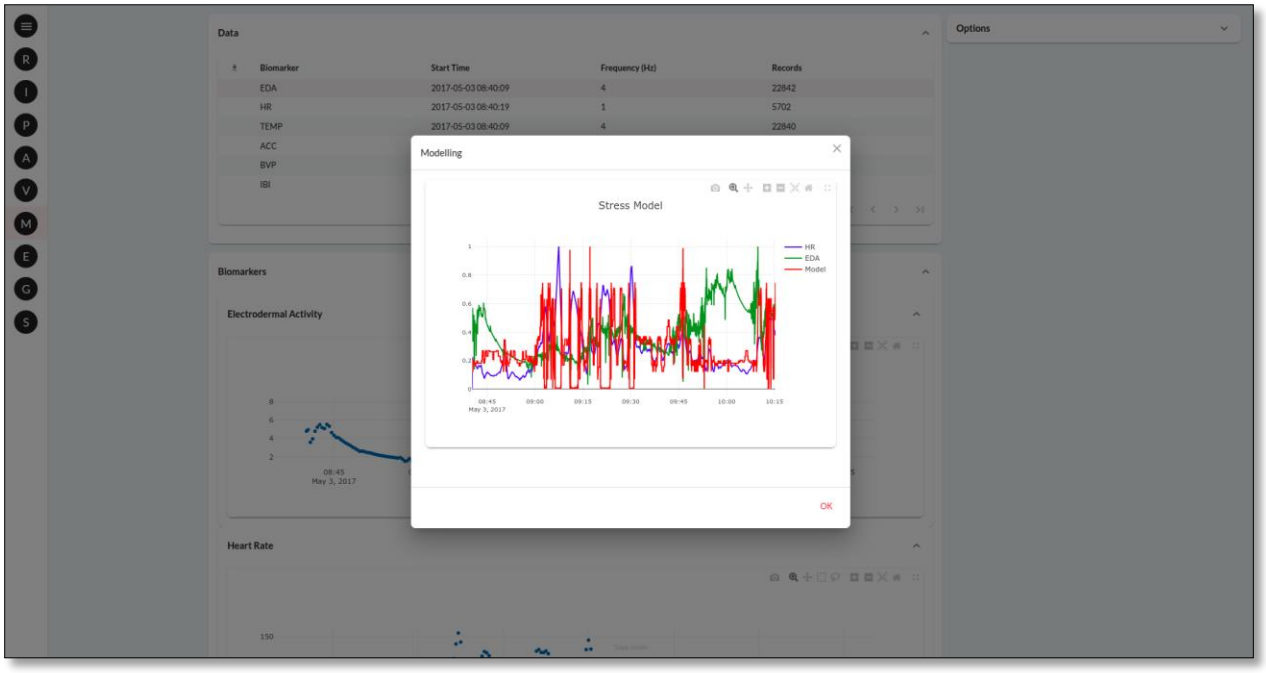


Currently several basic visualizations are available including box plots and correlation (shown below). These will be expanded in the future.

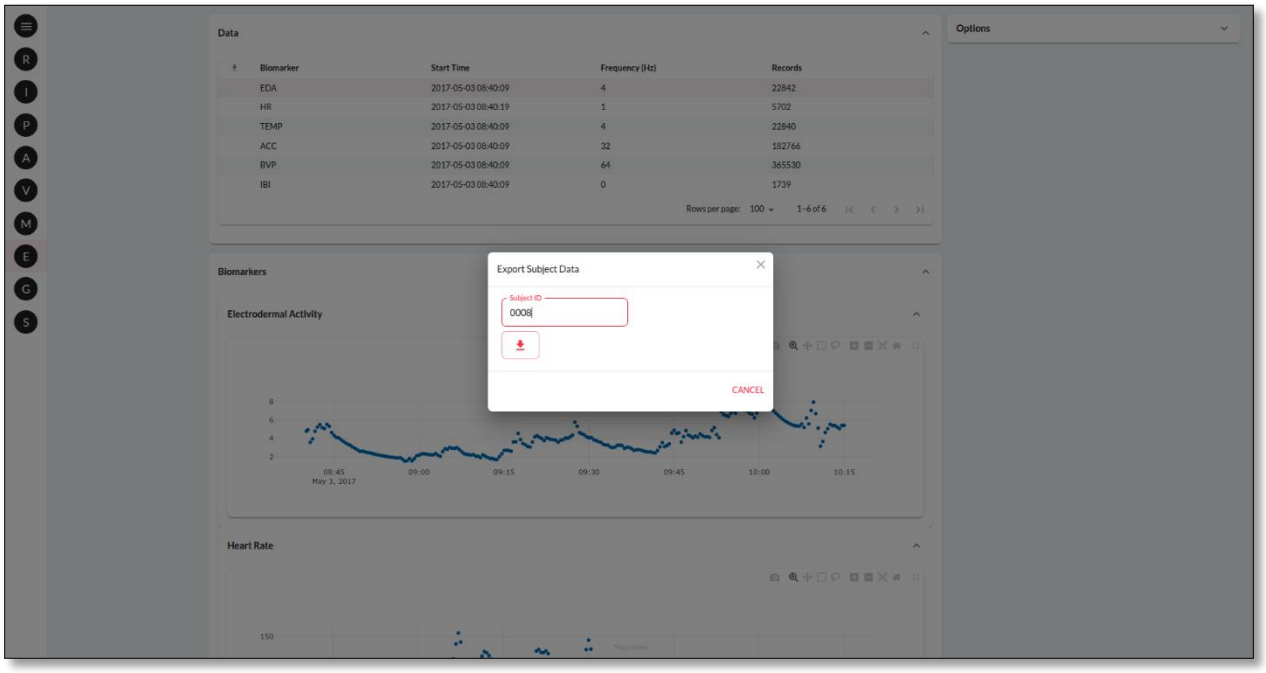


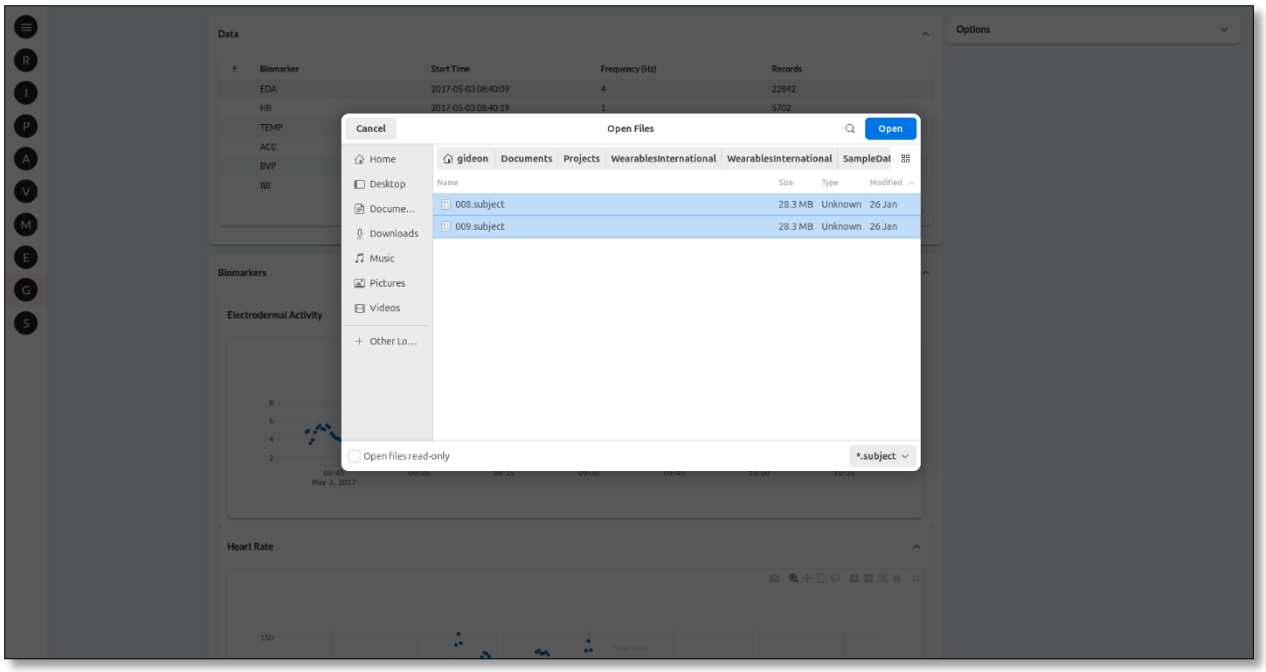
Default predictive models are available including models trained to measure stress, attention, arousal and valence. Note that these models are for demonstration purposes only and their accuracy has not been validated. Additional models will be made available in the future, or users may install their own models by replacing the individual model files located in the **Models** sub-folder.



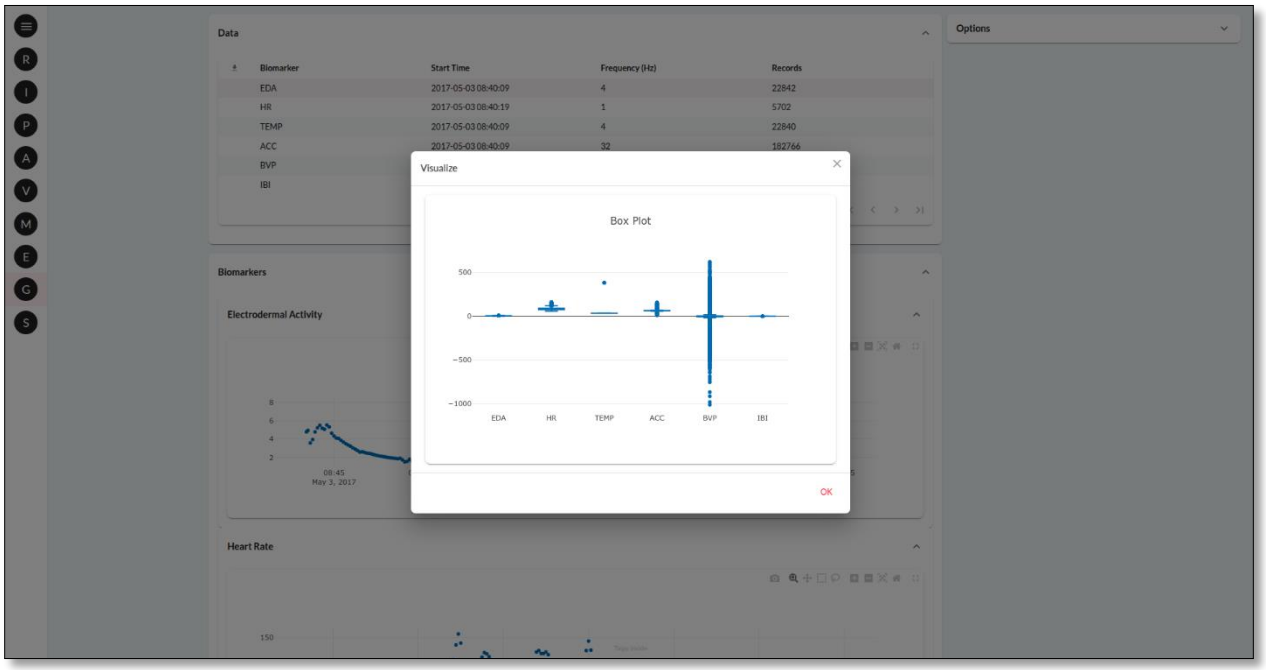


Studies typically involve pre and post-intervention periods. This is supported by exporting the current subject data after processing and artefact removal has been applied. Click on the **Export** menu and select a subject identifier and sub-folder to save the current data. Ensure that subjects are saved appropriately in pre-intervention and post-intervention folders as shown below.





To perform a group comparison via visualization, click on the **Group** menu and select all previously saved subjects from the pre-intervention sub-folder and click **OK**. Select the required visualization from the next dialog and click **OK**. Once done, click on the **Reset** menu at the top of the menu bar. Repeat this process by clicking on the **Group** menu again and selecting the post-intervention sub-folder. Select all subject files and click **OK** to perform the visualization for this subject group.



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