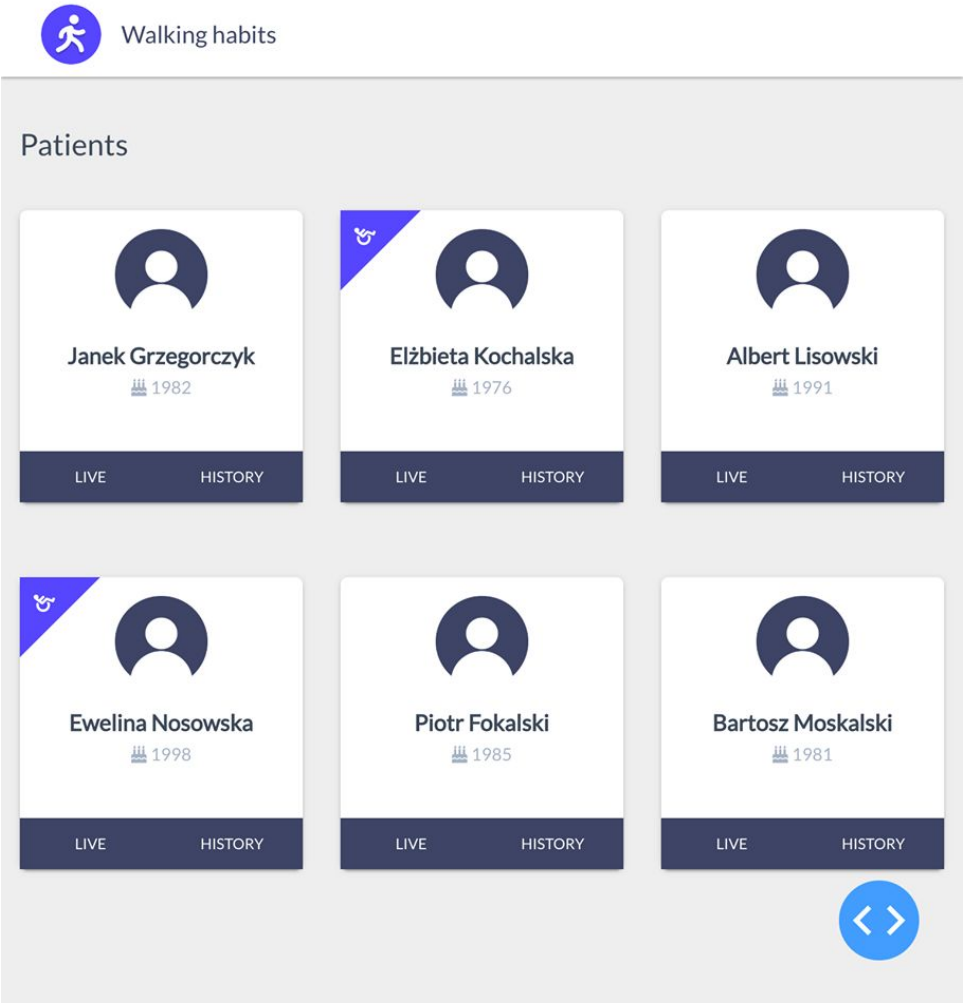
Python programming and data visualisation

Walking Habits

User Manual

1. Patients information

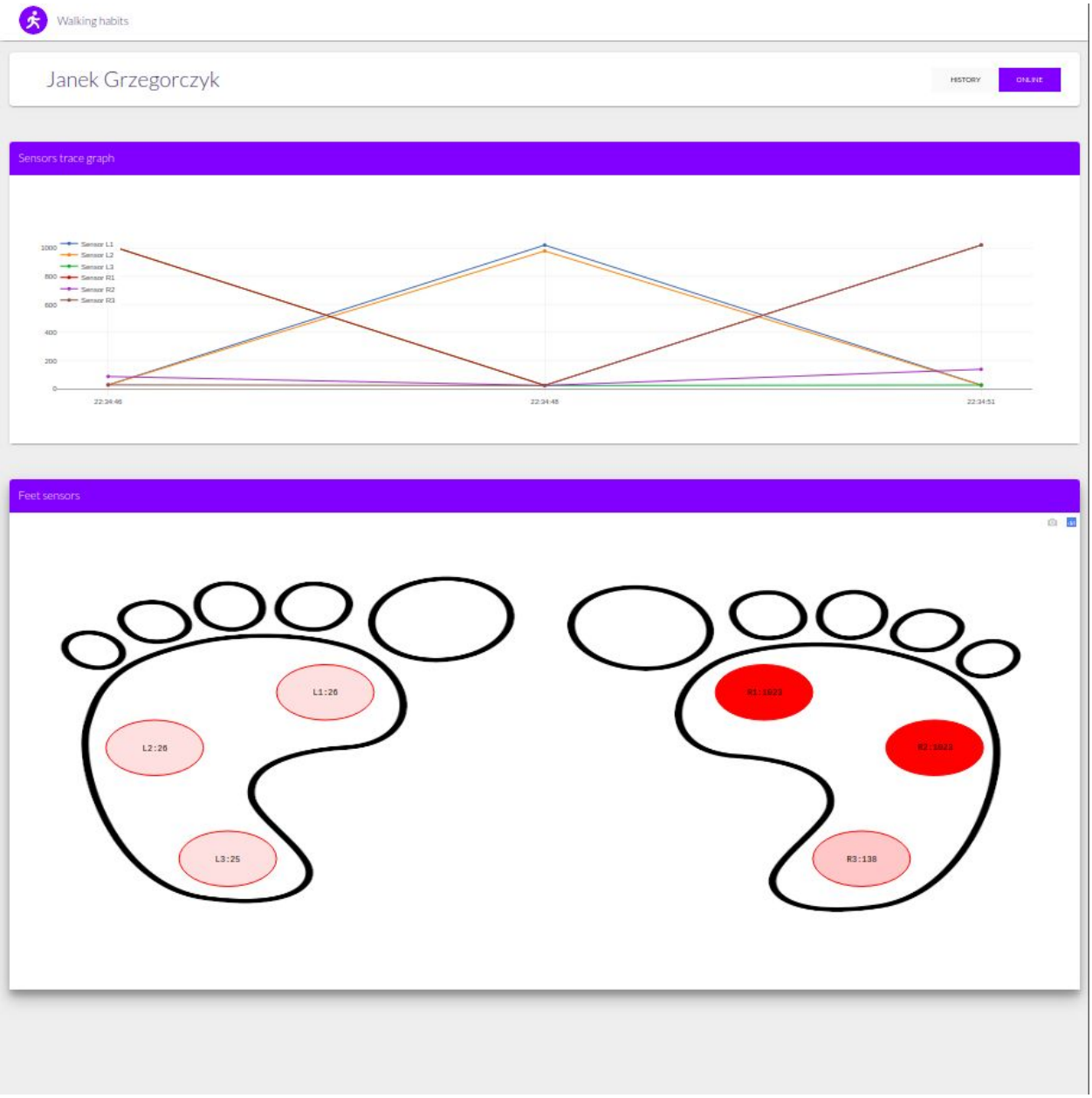


Picture 1. Patients list view

Patients list (picture 1.) is available just after entering the application. Here you can find here **the basic information about patients** and go from there to more specific areas: walking history section and real-time walking section.

2. Real time walking

To see **real time walking** you need to click “Live” button on main screen(picture 1.) for specified patient or use button “Live” in right top corner in history view to see history for selected patient. . After that application will display screen shown on picture 2.



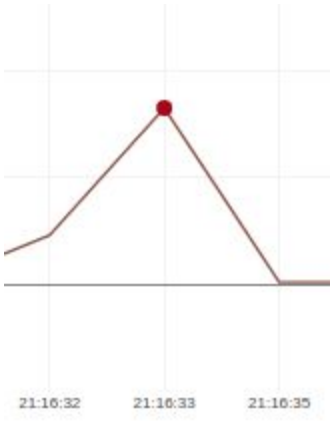
Picture 2. Patient real time walking view

There you can find 2 sections with plots. The first one shows animations containing feet and sensors location. Each sensor is described by as **[sensor_name]:[sensor_current_value]**. Each foot has 3 sensors located on foot front (L1 and R2), foot middle (L2 and R2) and foot back (L3 and R3). **The color of sensors** is changing in time and **depends on indicated value** - low value makes that sensor color is nearly white and high value makes that sensor is completely red.

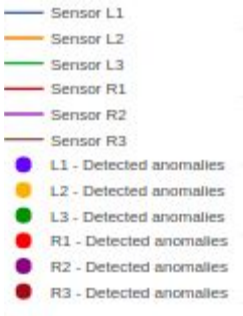
Additionally, you can **save current value of plot to PNG** file using the camera icon which is visible when you place your cursor in the top right corner of the plot.

Just after opening this view under feet plot can be displayed communicate "**Waiting for data incoming from device ...**". It means that since opening the view device has not sent any data. After a few seconds, the text should disappear and values should start being shown on booth plots.

Regarding the second section of the view, here we have a plot showing a trace of sensors values in time. Here we have at least 6 lines - one for each sensor. In the case of receiving information about any **anomalies** from the device, **on the plot you can find additional points**. Each point corresponding to the anomaly is displayed on the plot above the point which is part of the sensor trace line and is corresponding to sensor value at the time when the anomaly occurred. **Points corresponding to anomaly** are much thicker than a lines and their **colors** for each sensor are the same as **the colors of lines for these sensors** is much thicker than a line. In picture 3 you can see an example plot with anomaly and in picture 4 you can see plot legend containing all possible elements.

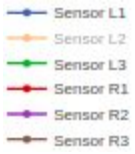


Picture 3. Example of anomaly on the plot



Picture 4. Legend with all possible elements

For analysis purposes, **you can hide some elements on the traces plot**. To do it just go to the legend section on the plot and click on the mark of the element which you want to hide. After clicking on the mark of the trace of sensor L2 legend should look like on picture 5 and line for sensor L2 should be hidden on the traces polt. It improves visibility of data on the plot and you can analyze each trace separately or analyze sensors traces in pairs, etc.



Picture 5. Example of legend with hidden plot element

Traces plot has tools bar in top right corner - picture 6. You can use this bar to:

- **download** current value of plot as **PNG file**
- change cursor role to **pan** (to use cursor for moving on the chart) or **zoom** (to use cursor for changing zoom)
- changing zoom: **zoom in**, **zoom out**, **autoscale** and **reset axis** options

Picture 7. Plots toolbar

If you are not sure which icon from bar is connected with appropriate action described above, you can check it **placing cursor on icons** - then you will **see description for selected action**. Additionally you can **change zoom** using your **mouse scroll**.

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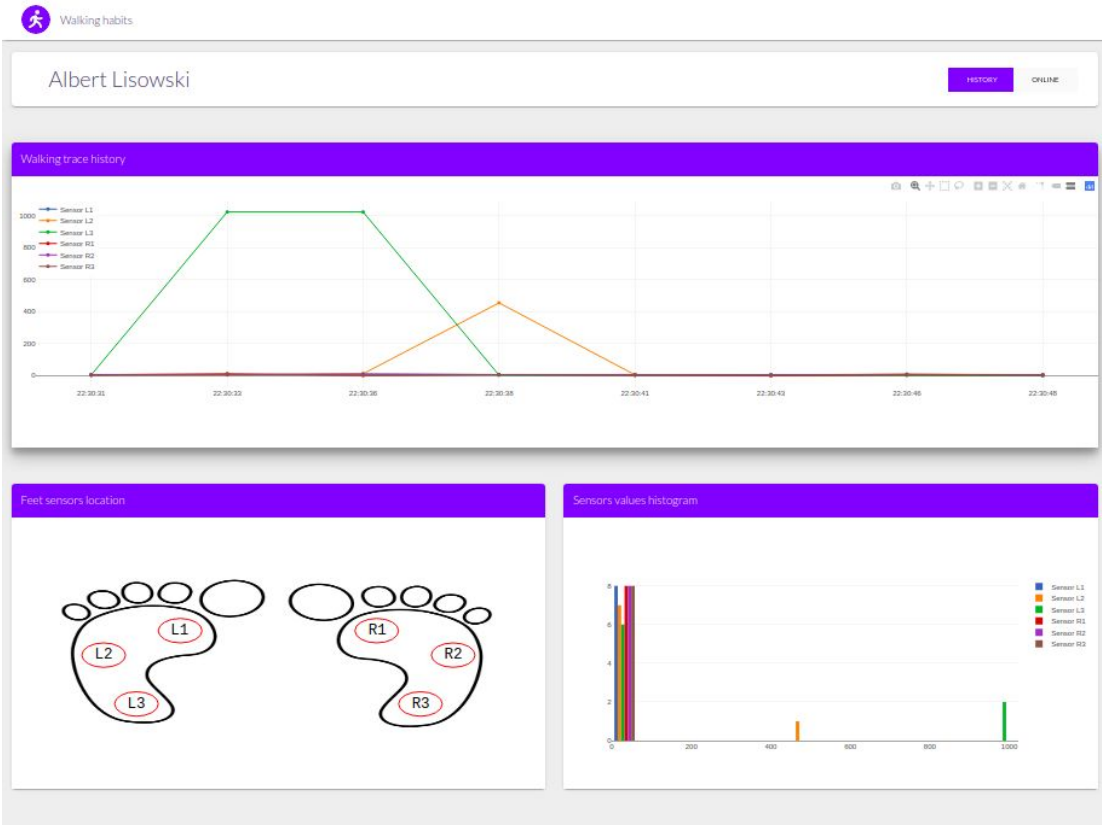
3. Walking history

To see **walking history** you need to click the “History” button on the main screen (picture 1.) for specified patient or use button “History” in right top corner in live view to see history for selected patient. After that application will display screen shown in picture 7.



Picture 7. Walking history view

This view is quite similar to a real-time walking view (point 3.). The first plot shows the **sensors' locations** with their names. The second plot is exactly the same plot as in real-time walking view, but it is showing the **history of walking for the last 10 minutes** and is not updated in real-time. **On this plot user can check all sensors values from this time range by placing cursor in appropriate place on the plot (picture 8)**. Due to the fact that this plot has the same options as the plot described in point 3. we will skip those options described here.

Picture 8. Checking values from specific time on plot

The third plot is the histogram. It also has a toolbar with the same options as for traces plot, but it **does not allow you to use the mouse scroll to zoom in and zoom out**.