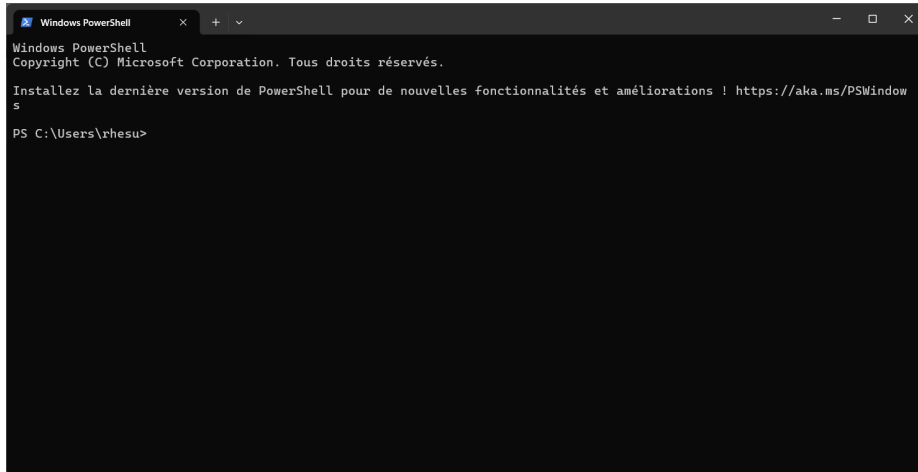


# How to use the dARt toolkit:

Be sure to also read the [README.md](#) file to get the best understanding of the toolkit.

1. Open your **terminal**

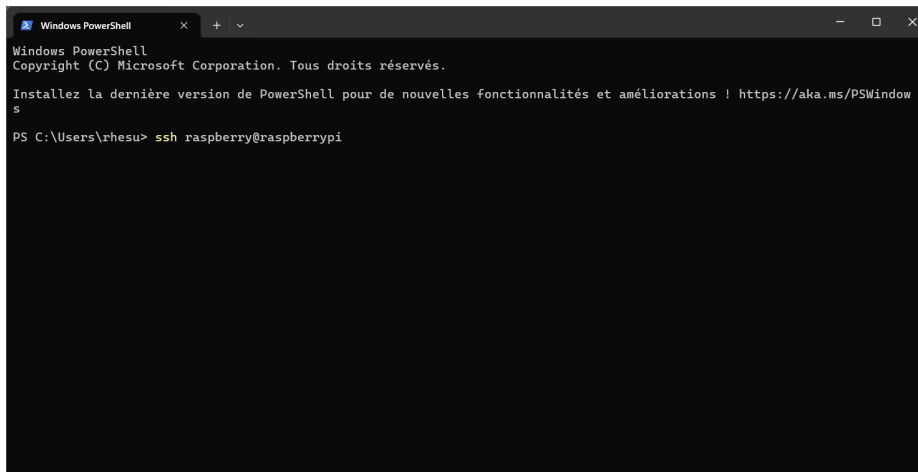


```
Windows PowerShell
Copyright (C) Microsoft Corporation. Tous droits réservés.

Installez la dernière version de PowerShell pour de nouvelles fonctionnalités et améliorations ! https://aka.ms/PSWindow
s

PS C:\Users\rhesu>
```

2. type **“ssh raspberrypi@raspberrypi”** and then enter the password **“raspberry”**

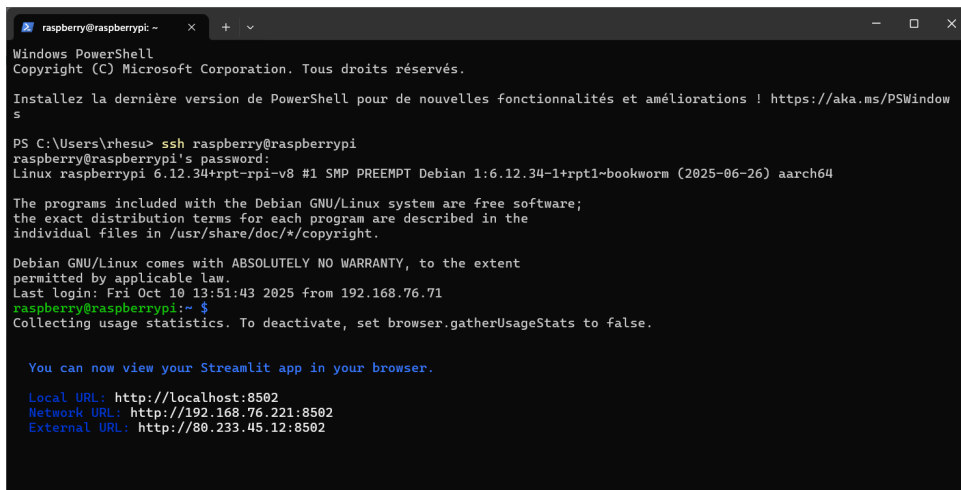


```
Windows PowerShell
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Installez la dernière version de PowerShell pour de nouvelles fonctionnalités et améliorations ! https://aka.ms/PSWindow
s

PS C:\Users\rhesu> ssh raspberrypi@raspberrypi
```

3. Now the dARt toolkit should launch automatically, but otherwise, you can launch it manually with the command **“[./start-dart.sh](#)”**.



```
Windows PowerShell
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Installez la dernière version de PowerShell pour de nouvelles fonctionnalités et améliorations ! https://aka.ms/PSWindow
s

PS C:\Users\rhesu> ssh raspberrypi@raspberrypi
raspberrypi@raspberrypi's password:
Linux raspberrypi 6.12.34+rpt-rpi-v8 #1 SMP PREEMPT Debian 1:6.12.34-1+rpt1-bookworm (2025-06-26) aarch64

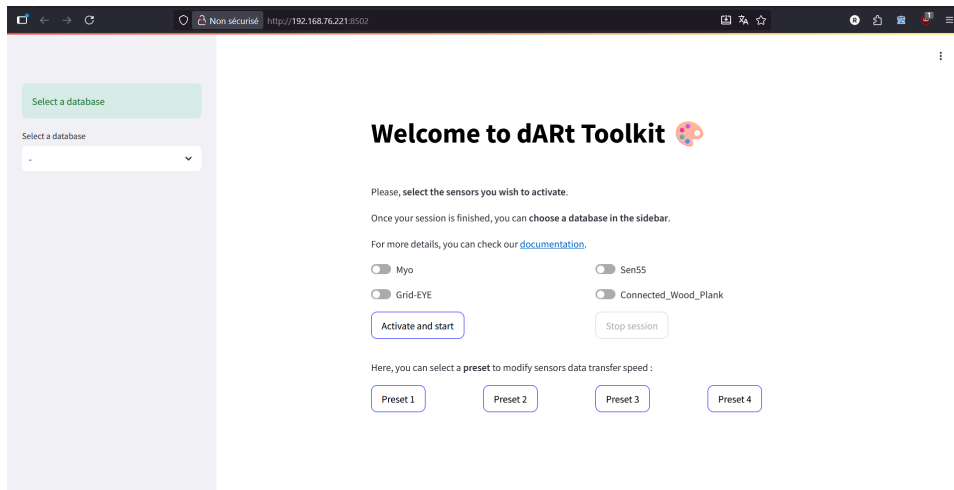
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Oct 10 13:51:43 2025 from 192.168.76.71
raspberrypi@raspberrypi:~$
Collecting usage statistics. To deactivate, set browser.gatherUsageStats to false.

You can now view your Streamlit app in your browser.

Local URL: http://localhost:8502
Network URL: http://192.168.76.221:8502
External URL: http://80.233.45.12:8502
```

4. Use the second link to get to the dARt Web Application.



5. From there you can Start/Stop data recording, be sure that a USB pendrive is attached to the Raspberry Pi.
6. Once the data gathering is done, you can see what has been recorded in the pendrive connected to the Raspberry.

## TouchDesigner

To use TouchDesigner, you first have to modify the **config.json** file. If the dARt toolkit web application is still active, use **ctrl+c** to quit. Then use the command "**nano Application/dARt/src/config/config.json**" to modify the configuration file. You now need to modify the local address with your own IP address. Now the data gathered should be sent to TouchDesigner.



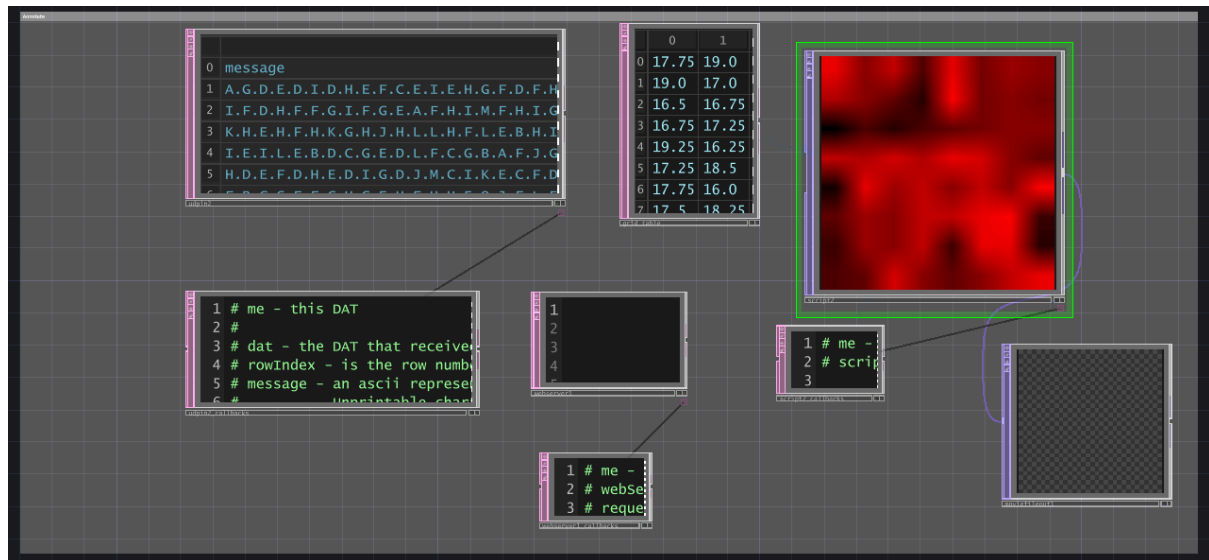
Every block corresponds to a different sensor:

- Green = SEN55
- White = Grideye
- Red = Connected Wood Plank
- Orange = Myo armband

You can watch the data in real time on the different tables.

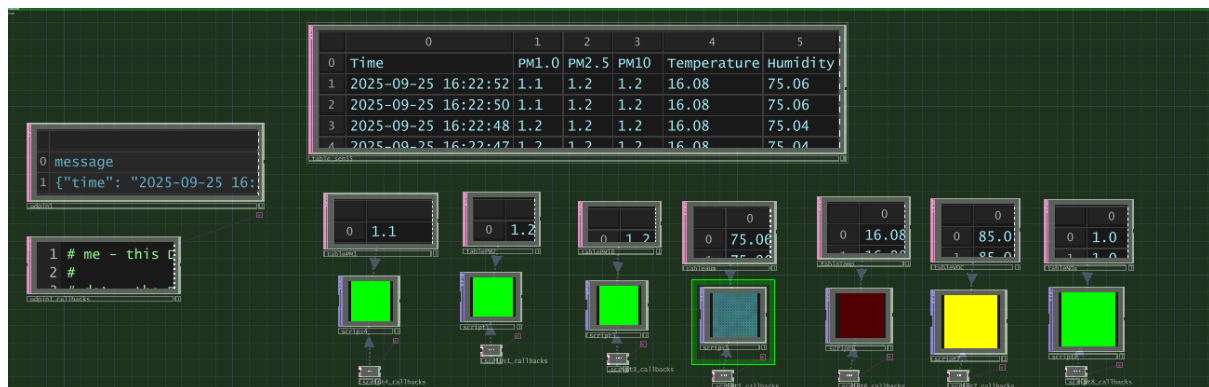
You should be able to watch the Grideye camera recording in real time and record it yourself with the Movie File Out node.

## Grideye



## SEN55

For the SEN55, you can observe visually the evolution of air quality by looking at the SCRIPT TOP going from green to red. You can also watch the evolution of the humidity and temperature inside the room with the SCRIPT TOP for those parameters gaining in saturation with their value increasing.



You can always modify the way to visualise data yourself if needed.

# Myo

To start data recording on TouchDesigner, you first need to, after starting the data recording of the Myo Sensor, go to the database page and check the **Get real time data** box, you should now be able to get data to TouchDesigner.

The screenshot shows a web interface for a Myo sensor database. On the left, there's a sidebar with a 'Select a database' dropdown menu currently set to 'Myo\_Sensor\_database'. The main area displays statistics for a specific CSV file: 'myo\_data\_96:F7\_20251010\_142104.csv'. Below the title is a table with statistical data for various columns (EMG1-EMG8, OrientationW, OrientationX, OrientationY, OrientationZ, AccX, AccY). At the bottom, there's a checkbox for 'Get Real Time Data' and a 'Download Data' button.

	EMG1	EMG2	EMG3	EMG4	EMG5	EMG6	EMG7	EMG8	OrientationW	OrientationX	OrientationY	OrientationZ	AccX	AccY
count	359	359	359	359	359	359	359	359	359	359	359	359	359	359
mean	-12.4908	1.0111	-6.7354	22.7159	21.0752	23.3092	1.1393	1.7047	16.2071421	-516.59	16.2071421	-516.59	16.2071421	-516.59
std	14.1292	17.185	15.3116	15.207	16.3337	14.9652	12.4758	15.4215	184.6707	1,167.21	184.6707	1,167.21	184.6707	1,167.21
min	-65	-123	-80	-36	-49	-27	-48	-78	15,582	-3,167.21	15,582	-3,167.21	15,582	-3,167.21
25%	-18	-3.5	-12	19	16	19.5	-4	-3	16,157.5	-78	16,157.5	-78	16,157.5	-78
50%	-14	0	-6	25	22	25	1	1	16,232		16,232		16,232	
75%	-8	7.5	-1	28	27	28	7	7	16,361		16,361		16,361	
max	123	95	67	99	79	99	44	90	16,378		16,378		16,378	

☐ Get Real Time Data

Download Data - myo\_data\_96:F7\_20251010\_142104.csv

Download myo\_data\_96:F7\_20251010\_142104.csv data as CSV

On TouchDesigner, you should be able to watch the movement of the armband on 3 different axis, all those axis are three dimensional but are represented by two 2 dimensional axis with the same y-axis.

The screenshot shows a TouchDesigner interface with a data table at the top and several visualizers below. The table has columns for Date, Time, EMG1-EMG8, OrientationW, OrientationX, OrientationY, OrientationZ, AccX, and AccY. Below the table, there are four visualizers: 1. 'message' showing a list of data rows. 2. 'orientationw orientationx orientationy' showing three separate plots for each orientation axis. 3. 'GyroX GyroY GyroZ' showing three separate plots for each gyro axis. 4. 'AccX AccY AccZ' showing three separate plots for each acceleration axis. Each plot has a time axis and a value axis.