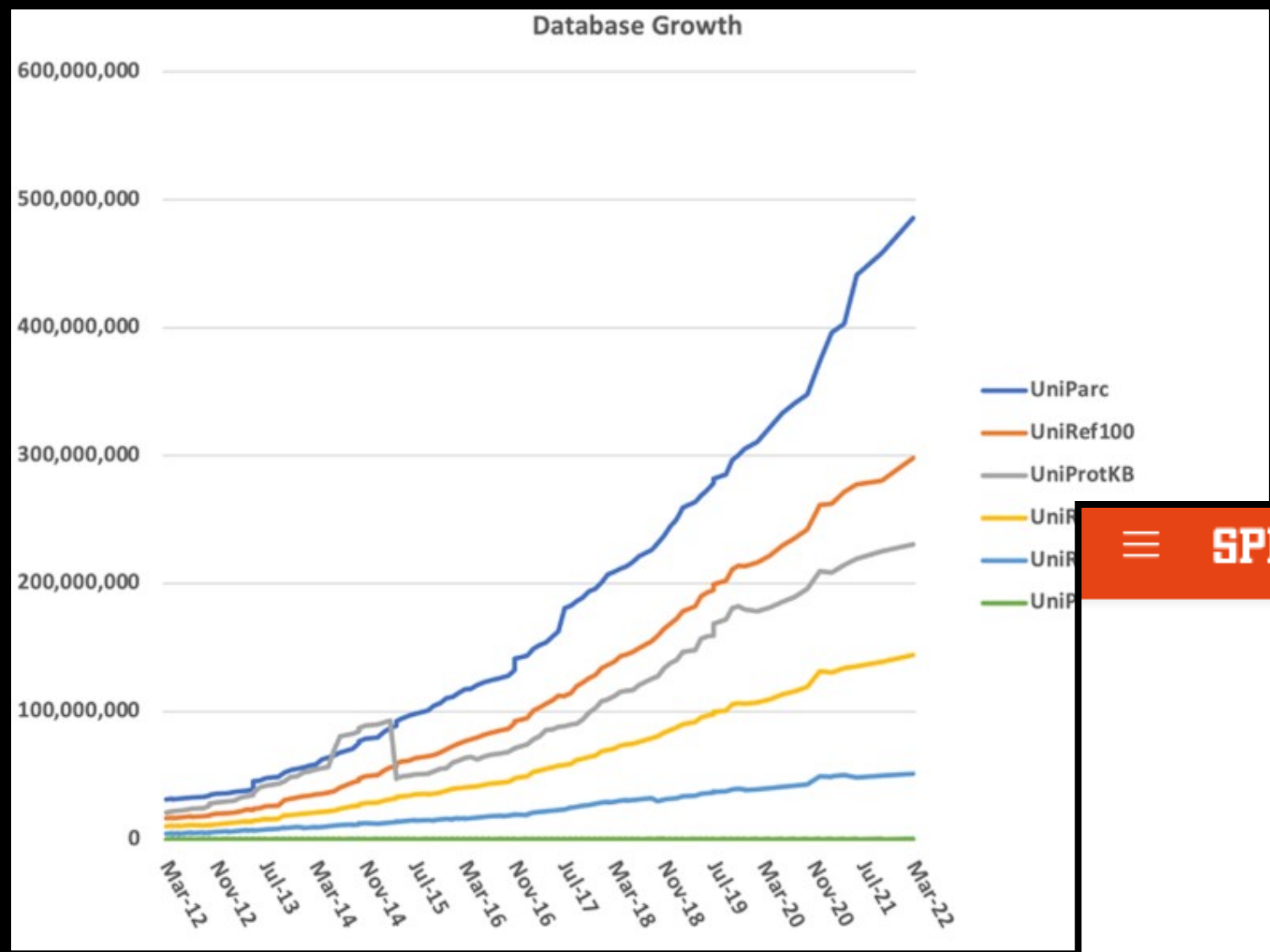


Interactive Visualisation

with Python and Plotly

Christian Faber, 20.03.2024



Consultant | Data Science | Corporate & Growth Strategy (m/w/d)

EY-Parthenon GmbH | Berlin, Düsseldorf, Hamburg, München

Teilweise Home-Office

Schnelle Bewerbung

Wir suchen dich als Consultant | **Data Science** ab Q3 2024. * Du untersuchst strategische Fragestellungen mit Hilf... [mehr](#)

vor 1 Woche

SPIEGEL Netzwelt

US-Wahl und Daten-Ingenieure

Ich ganz allein habe Trump ins Amt gebracht

Eine Geschichte sorgt für Aufsehen: Eine geheimnisvolle Datenfirma soll mit Psychogrammen von US-Wählern Donald Trump ins Weiße Haus gehievt haben. Was ist an der Schauergeschichte dran?

Von **Fabian Reinbold** und **Thies Schnack**

06.12.2016, 11.01 Uhr

Big Data Architekt (m/w/d)

Sopra Steria | Berlin, Frankfurt am Main, Hamburg, Köln, Leipzig, München

Teilweise Home-Office | [Gehalt anzeigen](#)

Bewerbungsstatus garantiert | Anschreiben nicht erforderlich

Auch die Entwicklung von Big **Data** sowie **Data Science** Use Cases mit und für unsere Kunden gehören zu Deinen... [mehr](#)

vor 5 Tagen

The AI model powering ChatGPT was trained using text databases from the internet and it is thought to have trained on around **300 billion words**, or **570 GB**, of data.

[Business Insider]

[Business Insider]

**Physics: Finding patterns in
complex informations**

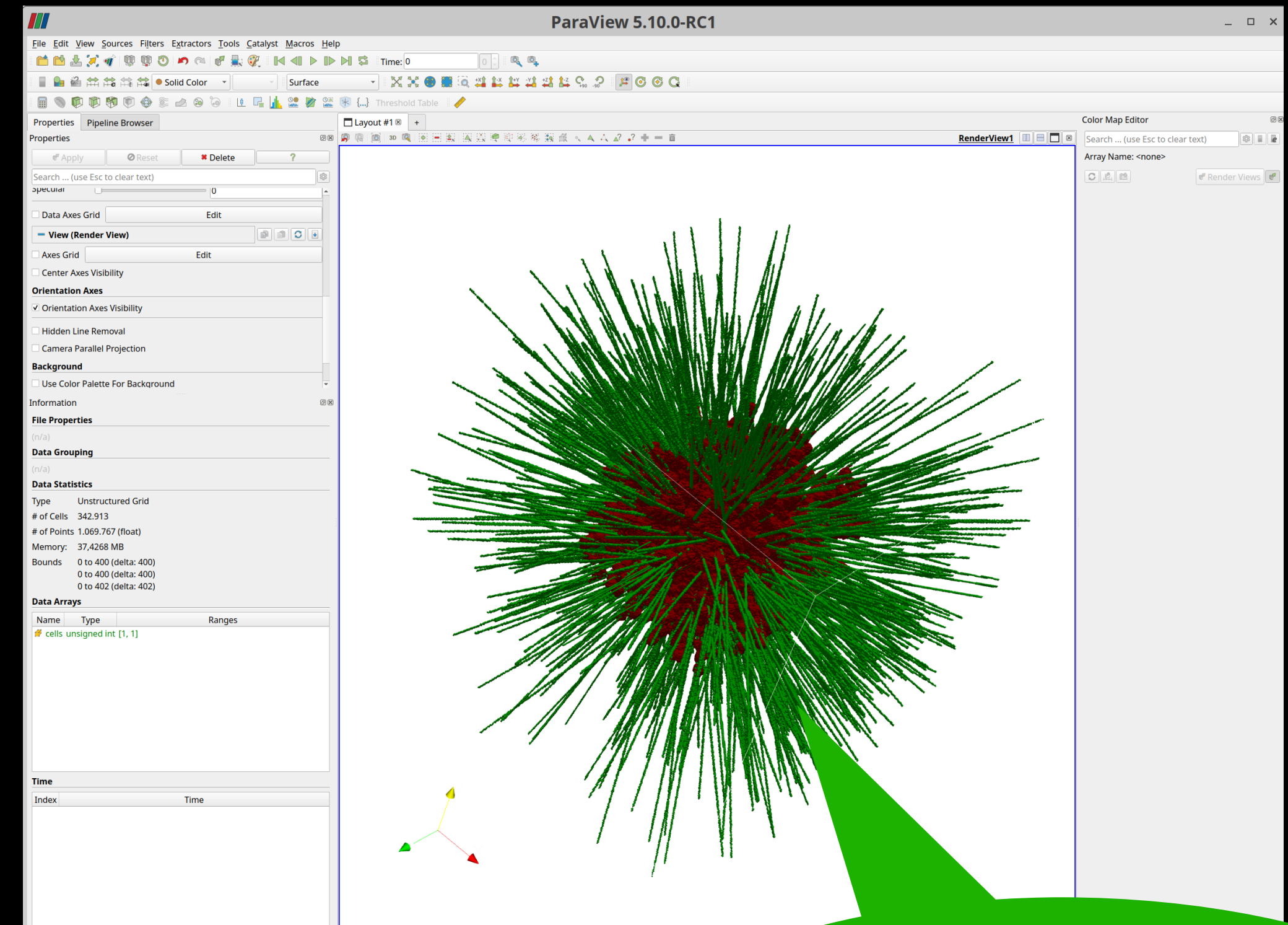
Hard coded

```
0 import matplotlib.pyplot as plt
1
2 def f(x: float) -> float:
3     return 0 if x<0 else 1
4
5 def main() -> None:
6     fig, ax = plt.subplots(figsize=(12,6))
7
8     x: list[float] = [x/100 for x in range(-300,300,1)]
9     ax.plot(x, [f(x) for y in x])
10
11     ax.set_xlabel("x")
12     ax.set_ylabel("Heaviside")
13     plt.show()
14
15 if __name__=="__main__":
16     main()
```

```
10     plt.show()
12 if __name__=="__main__":
14     main()
```

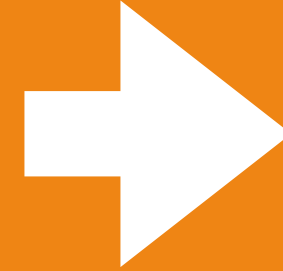
xor

Interactive GUI

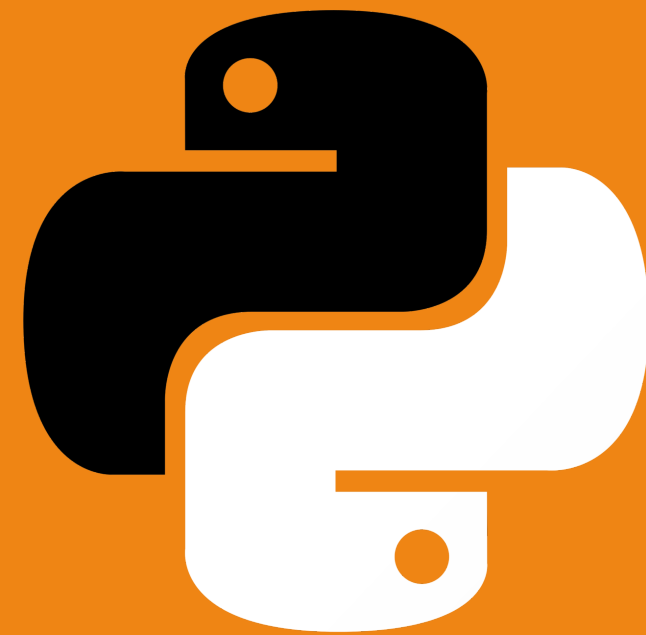


Poster BP 21.7
Today 11am

Raw Data



Data Loader



diabetes.txt > data

1	AGE	SEX	BMI	BP	S1	S2	S3	S4	S5	S6	Y
1	59	2	32.1	101	157	93.2	38	4	4.85		
2	48	1	21.6	87	183	103.2	70	3	3.85		
3	72	2	30.5	93	156	93.6	41	4	4.67		
4	24	1	25.3	84	198	131.4	40	5	4.85		
5	50	1	23	101	192	125.4	52	4	4.2905		
6	23	1	22.6	89	139	64.8	61	2	4.18		
7	36	2	22	90	160	99.6	50	3	3.9512		
8	66	2	26.2	114	255	185	56	4.55	4.24		
9	60	2	32.1	83	179	119.4	42	4	4.47		
10	29	1	30	85	180	93.4	43	4	5.3845		
11	22	1	18.6	97	114	57.6	46	2	3.95		
12	56	2	28	85	184	144.8	32	6	3.5835		
13	53	1	23.7	92	186	109.2	62	3	4.36		
14	50	2	26.2	97	186	105.4	49	4	5.06		

pandas_demo.py

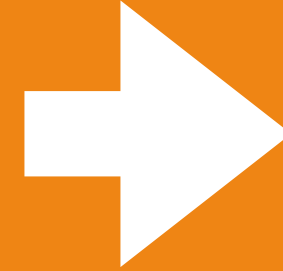
1

PROBLEME AUSGABE DEBUGGING-KONSOLE TERMINAL PORTS

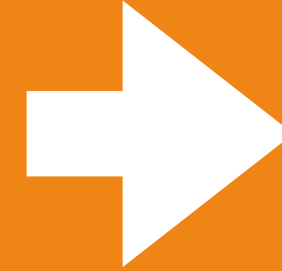
zsh + - [] [] ... ^ X

→ Demo []

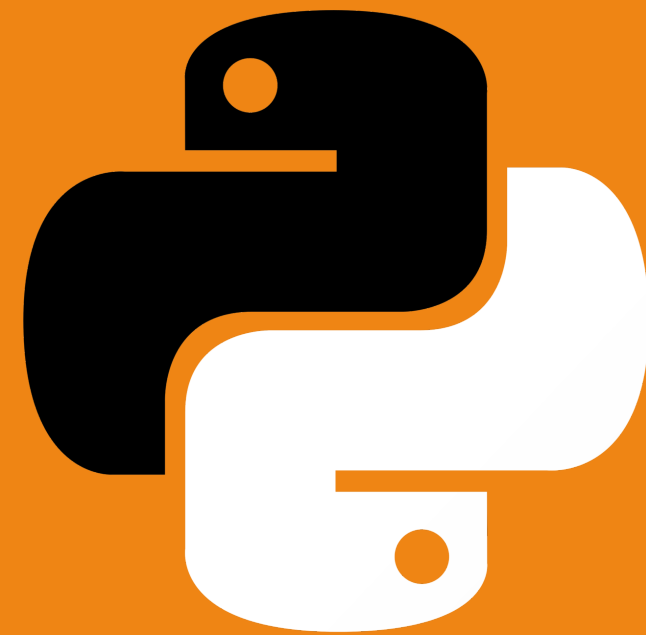
Raw Data

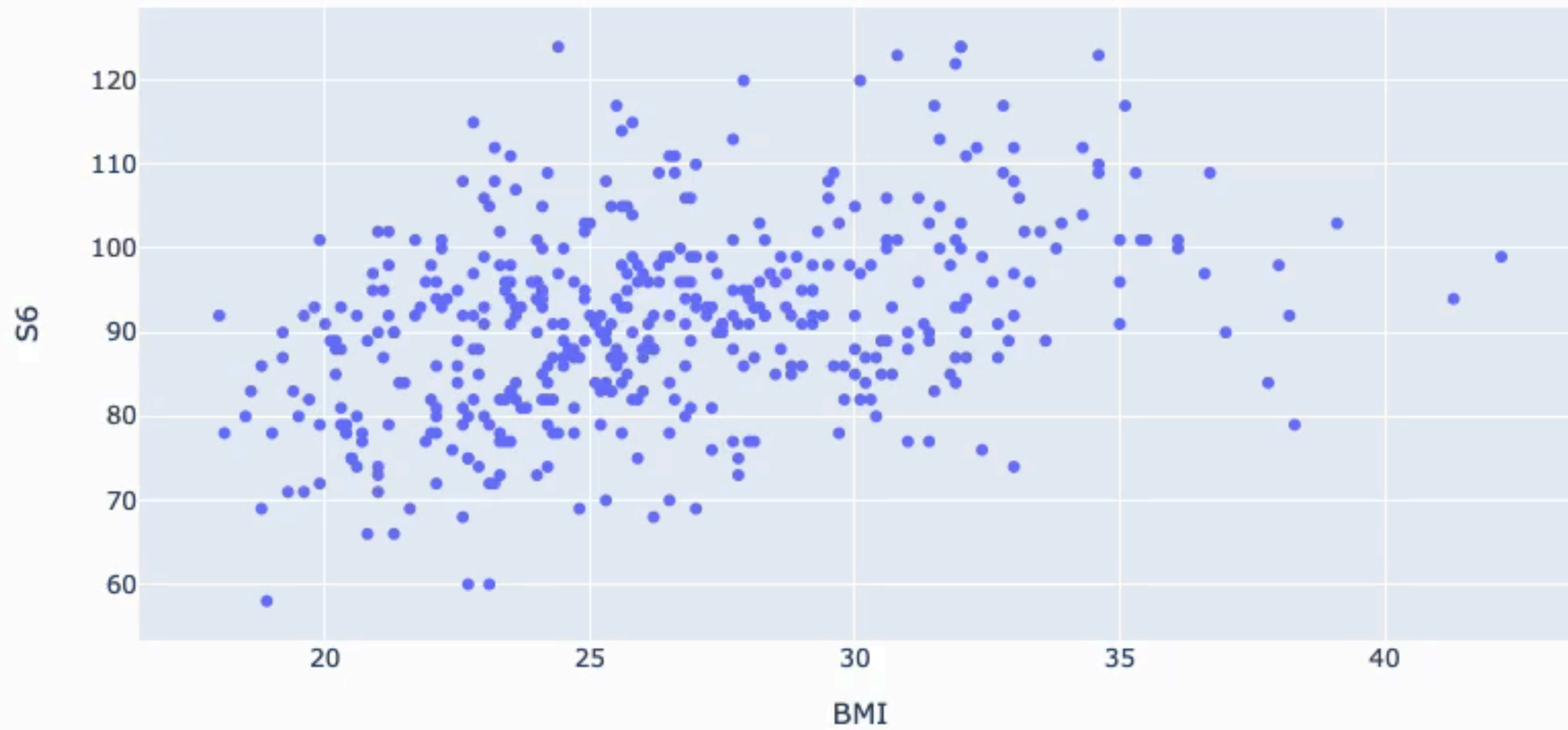


Data Loader

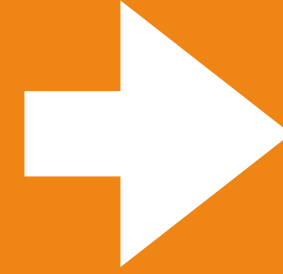


**Interactive
Plotting**

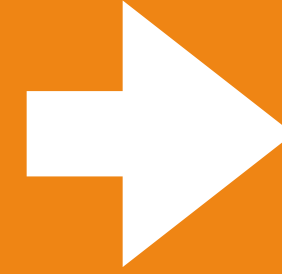




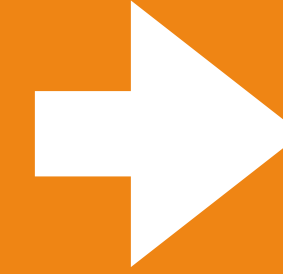
Raw Data



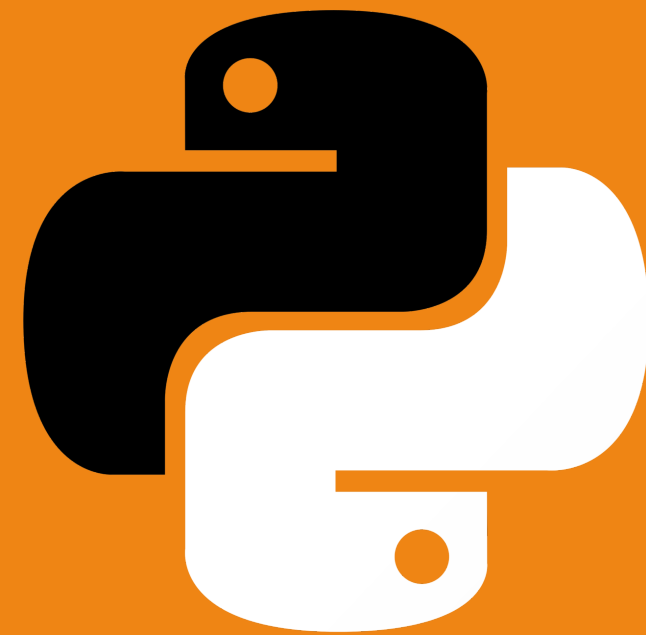
Pandas



**Interactive
Plotting**



GUI



Jupyter Lab

The screenshot shows the Jupyter Lab interface with a notebook titled "demo.ipynb". The notebook contains two code cells. The first cell imports pandas and plotly, and reads a CSV file named "diabetes.txt". The second cell creates a scatter plot of BMI vs S6 with a tooltip for a specific data point.

```
[1]: 1 import pandas as pd
2 import plotly.express as px
3
4 df = pd.read_csv("diabetes.txt", sep="\t")

[2]: 1 fig1 = px.scatter(
2     df, x="BMI", y="S6", hover_data=["SEX", "BP", "S1", "S2", "S3", "S4", "S5"]
3 )
4
5 fig1.show()
```

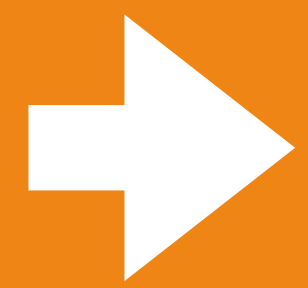
The scatter plot shows a positive correlation between BMI (x-axis, 20-40) and S6 (y-axis, 60-120). A tooltip for a data point at BMI=38.3 shows the following values: S6=79, SEX=1, BP=113, S1=165, S2=94.6, S3=53, S4=3, S5=4.4659.

Dash

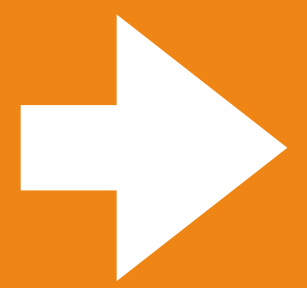
The screenshot shows a Dash dashboard with a dark theme. It features several widgets: three light control buttons (Stehlampe, Tischlampe, Lichtervorhang), two temperature gauges (Wohnzimmer: 20.2°C, Schlafzimmer: 20.4°C), and a weather widget for Merzenich showing -4°C and 10 km/h wind. Below these is a large line chart for the living room temperature over time, with a tooltip for Jan 8, 2024, 08:07:48 showing 21°C temperature, 1329% humidity, and 56.5% battery.

vs.

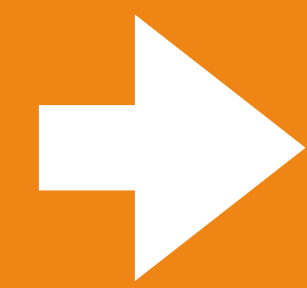
Raw Data



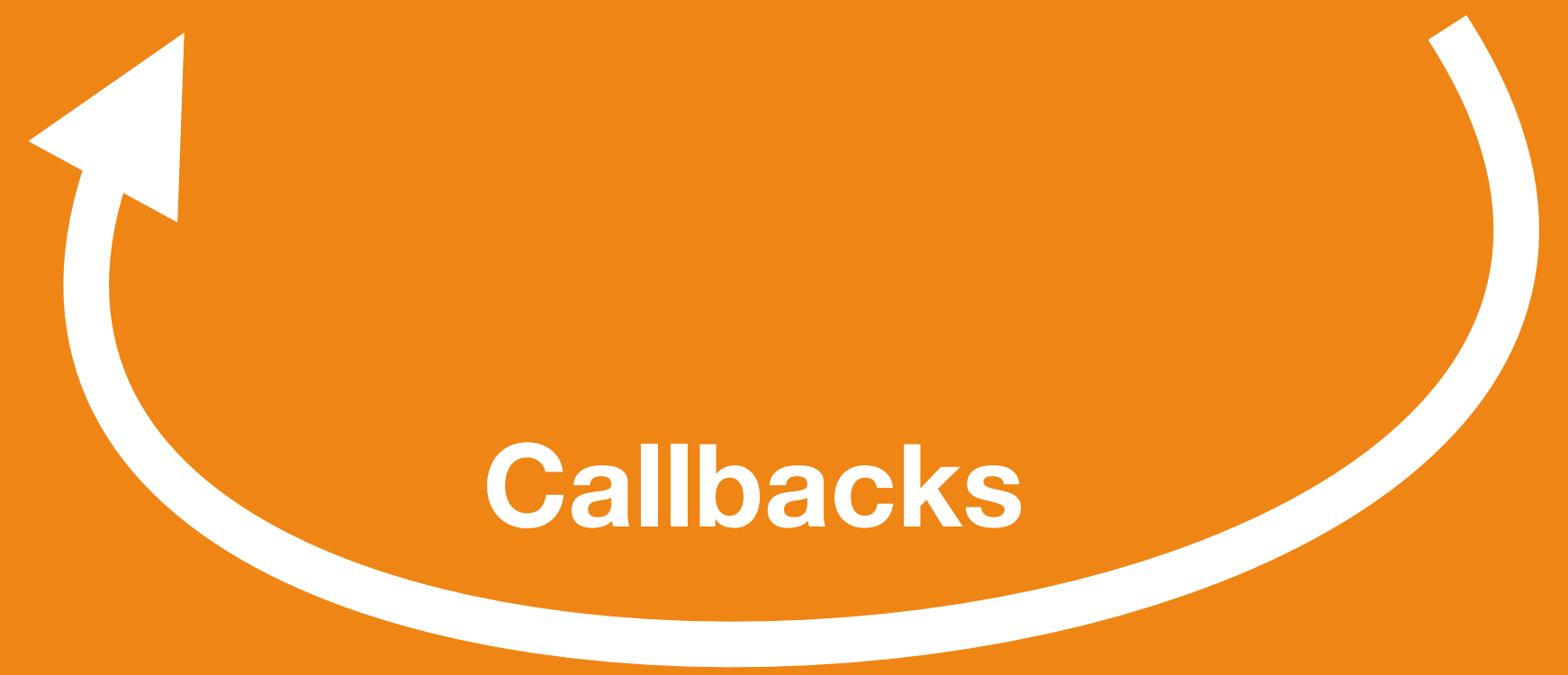
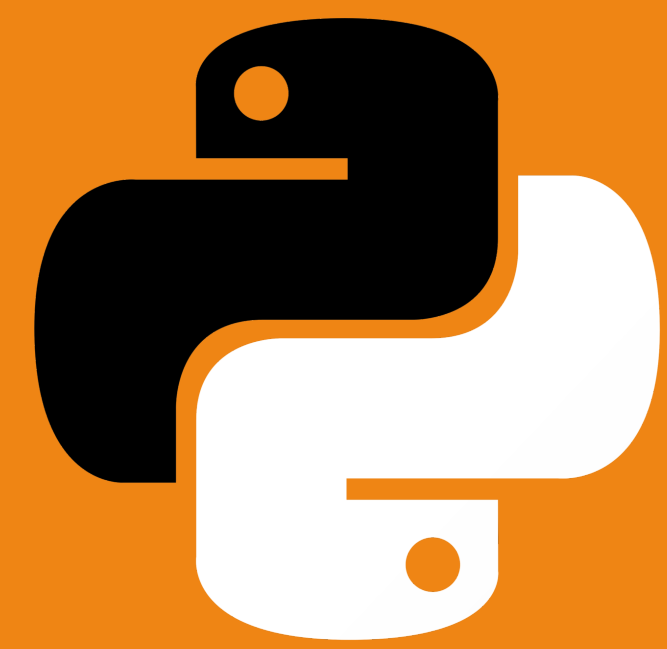
Pandas



Plotly



GUI



Example: Genomic RNA Data

Hands On / Live Demo

<https://gitlab.jsc.fz-juelich.de/faber1/talk-data-visualisation-with-plotly>

