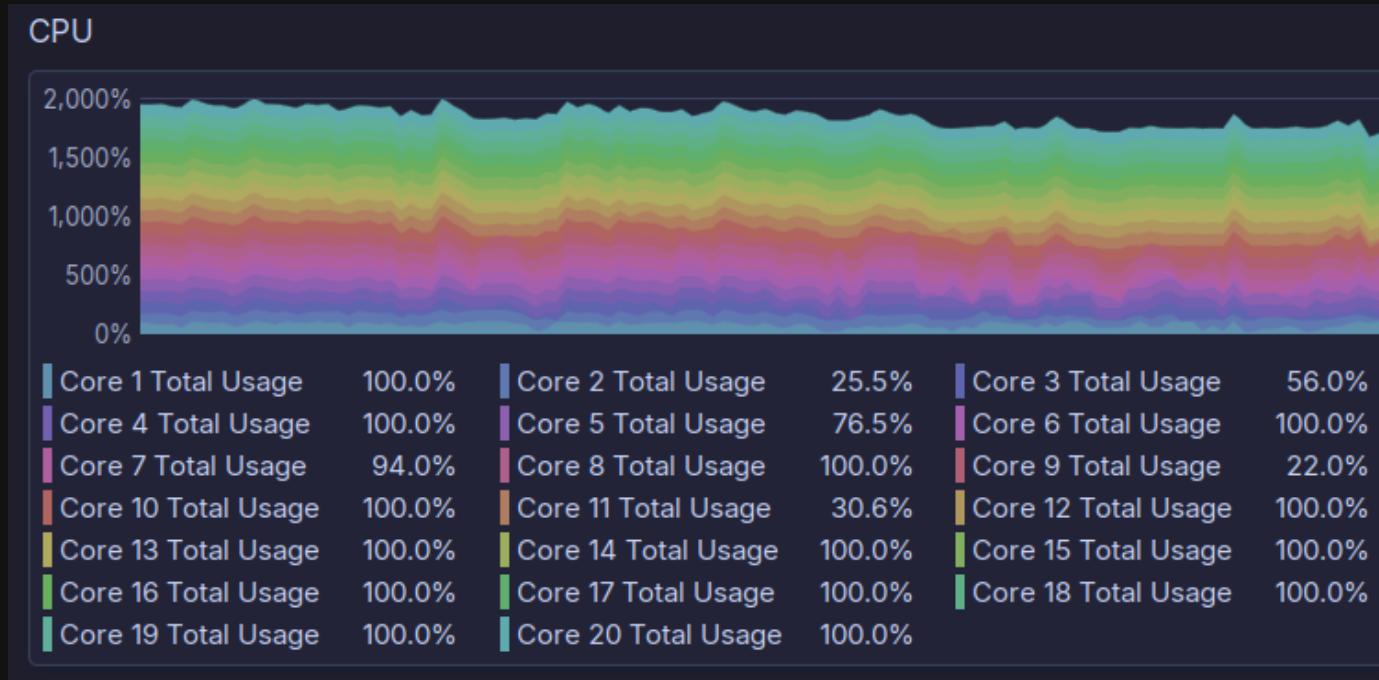


Time Series Forecasting

Rishabh Wanjari

20/06/2025

What is a time series?

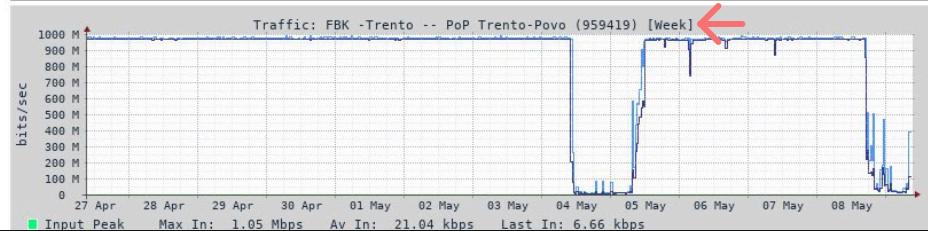
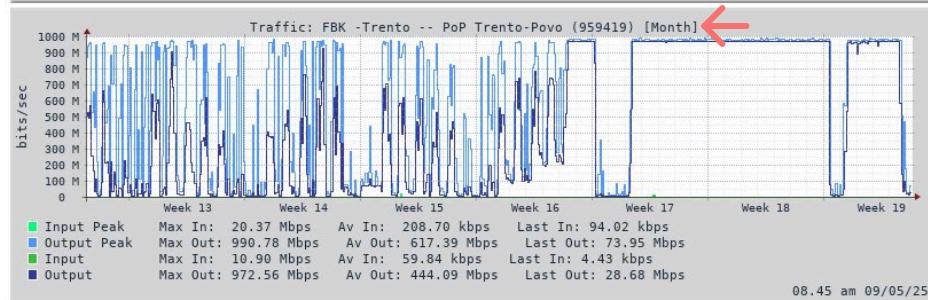
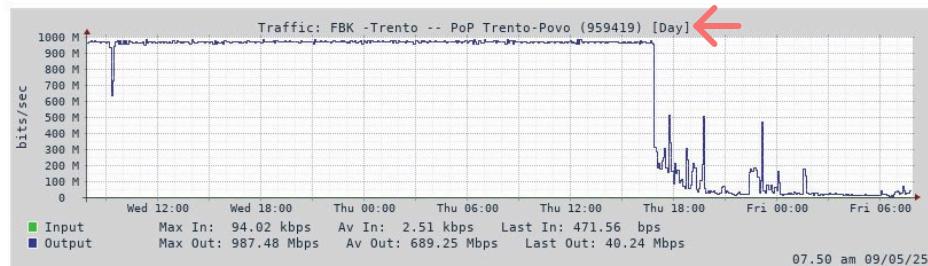


Statistiche di traffico

Time scale: [Day](#) [Week](#) [Month](#) [Year](#) [5 Year](#) Metrics: [IPv6](#) [Latency](#) [Traffic sum](#) Actions: [Set as default](#) [Get traffic](#)

FBK -Trento -- PoP Trento-Povo (959419)

Link name	Use	BW	Side A	Side B
FBK -Trento -- PoP Trento-Povo	access	1,00 Gbps	FBK -Trento	TN01-Povo



```
2025-06-03 13:33:26.619 | INFO  | __main__:main:59 - Checking for new data.
2025-06-03 13:33:34.829 | INFO  | __main__:main:63 - Data is newer. Continuing.
2025-06-03 13:33:36.298 | INFO  | __main__:download_data:167 - Downloaded the Italian data.
2025-06-03 13:33:37.918 | INFO  | __main__:download_trentino:221 - Downloaded the Trentino data.
2025-06-03 13:33:37.919 ['SRI_20250603T1305Z.tif', 'SRI_20250603T1310Z.tif', 'SRI_20250603T1315Z.tif', 'SRI_20250603T1320Z.tif']
2025-06-03 13:33:38.041 Filling holes unsing inpanting algorithm with gaussian kernel for each timestep (spatial interpolat
2025-06-03 13:33:40.715 Applying temporal interpolation for pixels missing at most 3 timesteps ...
2025-06-03 13:33:40.736 Interpolating 11119 pixels over time ...
2025-06-03 13:33:40.816 | INFO  | __main__:main:77 - Computing the forecast ...
2025-06-03 13:33:59.744 | INFO  | __main__:gen_imgs_and_notifs:117 - Generating rain PNGs
2025-06-03 13:34:11.378 | INFO  | __main__:gen_imgs_and_notifs:133 - Generating PNGs for Trentino
2025-06-03 13:34:15.650 | INFO  | __main__:gen_imgs_and_notifs:148 - Sending notifications
2025-06-03 13:34:20.852 | INFO  | __main__:main:86 - Generating lightning strikes
2025-06-03 13:34:21.858 | INFO  | __main__:main:90 - Writing forecast time to a text file.
2025-06-03 13:34:21.863 | INFO  | __main__:main:105 - All tasks completed.
2025-06-03 13:34:22.019 | INFO  | __main__:main:59 - Checking for new data.
2025-06-03 13:34:29.775 | INFO  | __main__:main:66 - No new data. Waiting for 60 seconds.
2025-06-03 13:35:29.776 | INFO  | __main__:main:59 - Checking for new data.
2025-06-03 13:35:37.741 | INFO  | __main__:main:66 - No new data. Waiting for 60 seconds.
2025-06-03 13:36:37.741 | INFO  | __main__:main:59 - Checking for new data.
2025-06-03 13:36:45.467 | INFO  | __main__:main:66 - No new data. Waiting for 60 seconds.
2025-06-03 13:37:45.467 | INFO  | __main__:main:59 - Checking for new data.
2025-06-03 13:37:53.283 | INFO  | __main__:main:66 - No new data. Waiting for 60 seconds.
2025-06-03 13:38:53.283 | INFO  | __main__:main:59 - Checking for new data.
2025-06-03 13:39:01.457 | INFO  | main :main:63 - Data is newer. Continuing.
```



Rishabh Wanjari

@rwanjari

[Edit profile](#)

⋮

Info

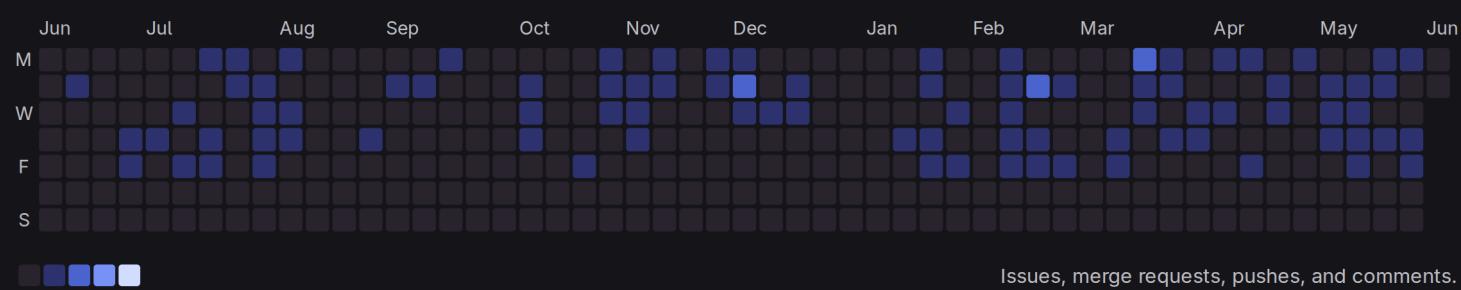
✉ FBK

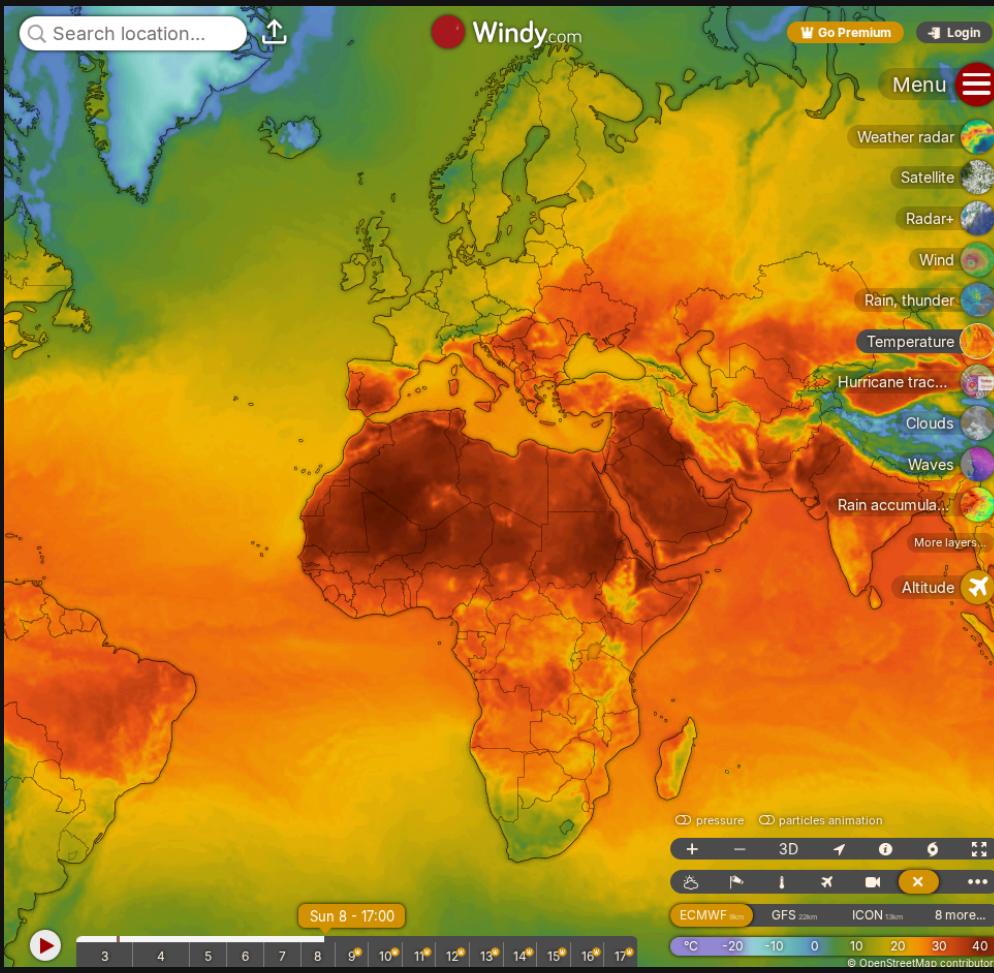
📅 Member since September 19, 2023

Contact

✉ rwanjari@fbk.eu

Activity

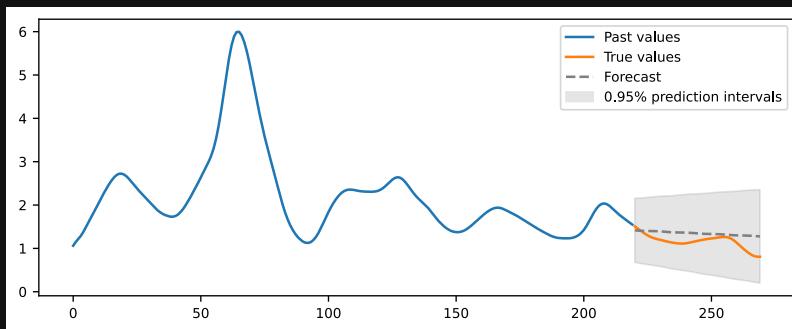
[View all](#)



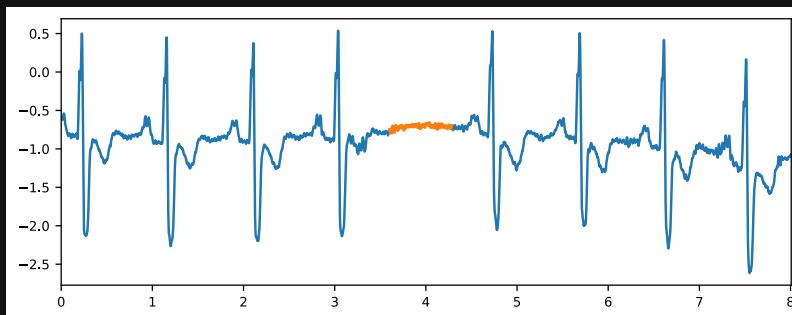
WINDY.COM

What can you do?

Forecasting

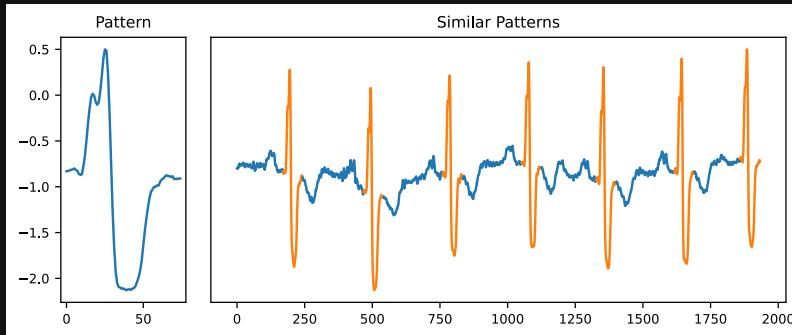


Anomaly detection

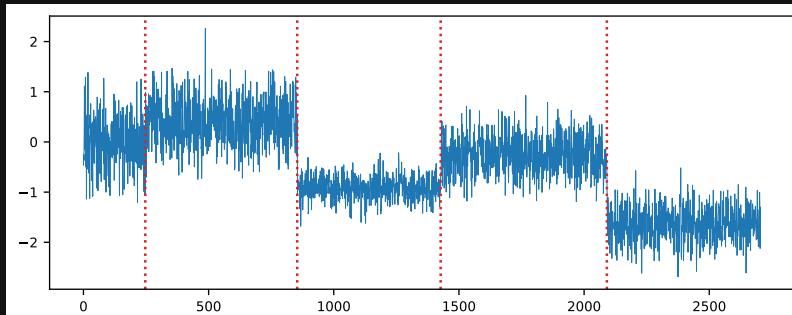


What else can you do?

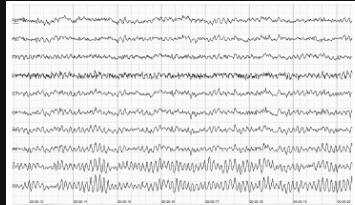
Pattern detection



Change point detection

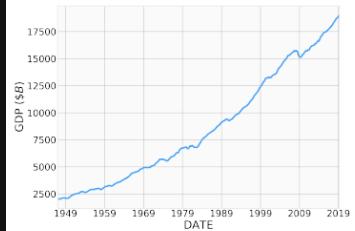


Fundamental behaviours



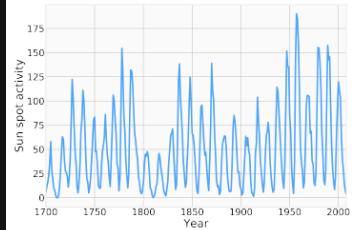
Stationarity

$$\langle x_t \rangle \approx \text{constant}$$



Trend

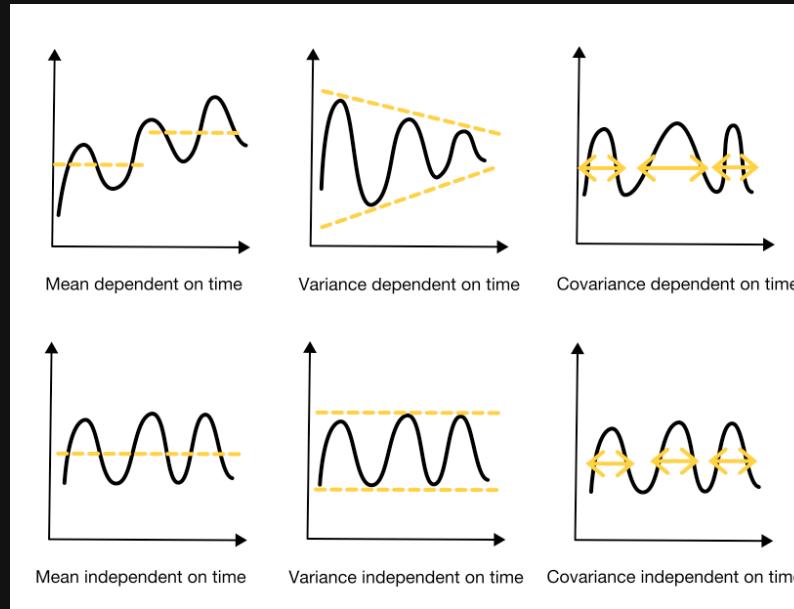
$$\langle x_t \rangle \approx ct$$



Seasonality

$$x_{t+T} \approx x_t$$

Stationarity



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GitHub

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