Time series data must be UNIQUE

In a time series data, there must not be a missing date

Time series data must be sorted – ordered

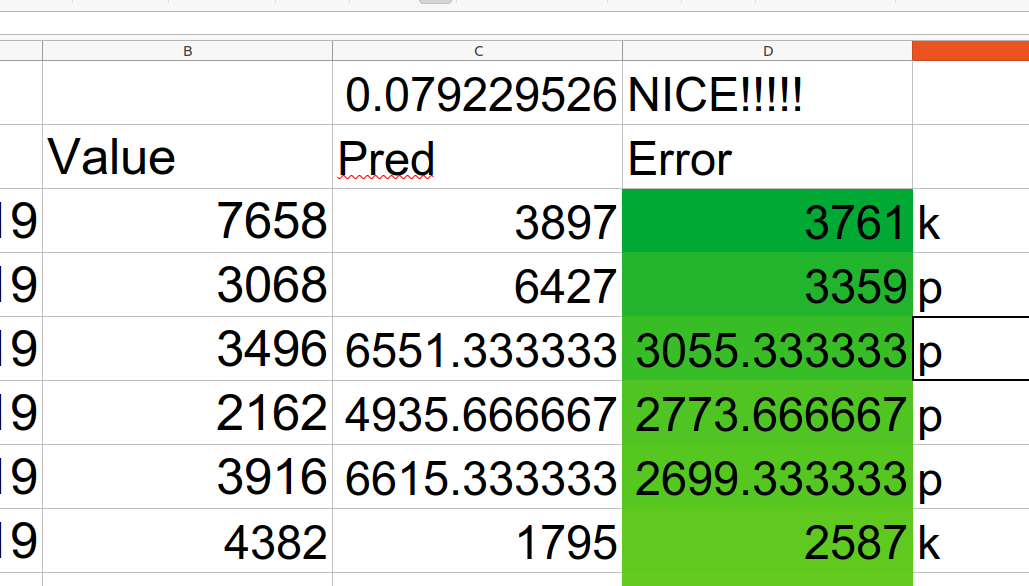
The additive model is Y[t] = T[t] + S[t] + e[t]

The multiplicative model is Y[t] = T[t] \* S[t] \* e[t]

25 December 2023

Next 30 days

1-24 January 2024



Error must be RANDOM, must be unpredictable!!! ERROR MUST BE NORMALLY DISTRIBUTED

If there is no correlation (very low) between target and error ===> means ==> NICE OUTPUT, because the error is random. ERROR IS NOT RELATED TO TARGET

| age | gender | height | weight | ap\_hi | ap\_lo | cholesterol | gluc | smoke | alco | active | cardio | bmi | map |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

How to plot a visualization more than 3 dimensions?

- multiscale visualization –> parallel coordinates

- cannot visualize all

**- dimension reduction [advanced]**

How do we define a customer ?

Customer – age !

21 →

22 →

62 →

Ubuntu

Centos

**https://crontab.guru**

00 22 1 \* \* /home/user/models/mypythoninfer.py

00 22 1,15 \* \* /home/user/models/mypythoninfer.py

#! Load pickle

#! MYSQL DATABASE

#! 100.000 rows

#! Transformation

#! churn/degil mi? predict

#! mysql, csv, json

#! bitti completed

Data Drift Management

{'rev\_Mean': 0.015600254059017006, 'mou\_Mean': 0.15578252598662726, 'totmrc\_Mean': 0.04976902500803797, 'da\_Mean': 0.013595430125279251, 'ovrmou\_Mean': 0.08424983648721641, 'ovrrev\_Mean': 0.12284411790936665, 'vceovr\_Mean': 0.11815232538761063, , 'roam\_Mean': 0.04090973674228865, 'change\_mou': 0.34800787877274375, 'change\_rev': 0.10268488606310826,, 'drop\_dat\_Mean': 0.13176470588454386, 'blck\_vce\_Mean': 0.1987749529533872, 'blck\_dat\_Mean': 0.4765729585409065, 'unan\_vce\_Mean': 0.13016549225802168, 'unan\_dat\_Mean': 0.35468374699083455, 'plcd\_vce\_Mean': 0.0732919716324719, 'plcd\_dat\_Mean': 0.37307128347968765, 'recv\_vce\_Mean': 0.06031519121955822, 'recv\_sms\_Mean': 0.10717781399931867, 'comp\_vce\_Mean': 0.05304893403494281, 'comp\_dat\_Mean': 0.38194024706279034, 'custcare\_Mean': 0.30852363024449225, 'ccrndmou\_Mean': 0.29099134227426326, 'cc\_mou\_Mean': 0.2798346706192744, 'inonemin\_Mean': 0.065660120324153, 'threeway\_Mean': 0.26071247108046636, 'mou\_cvce\_Mean': 0.08257237835870658,, 'mou\_rvce\_Mean': 0.08407949206264191, 'owylis\_vce\_Mean': 0.07239927527723762, 'mouowylisv\_Mean': 0.10396373052989037, 'iwylis\_vce\_Mean': 0.07951524446553926, 'mouiwylisv\_Mean': 0.12471452204298125, 'peak\_vce\_Mean': 0.04756342242215647, 'peak\_dat\_Mean': 0.3445150084145754, 'mou\_peav\_Mean': 0.055313949574202596, 'mou\_pead\_Mean': 0.3197735610465855, 'opk\_vce\_Mean': 0.17776674654277616, 'opk\_dat\_Mean': 0.41381990452187434, 'mou\_opkv\_Mean': 0.21832823937807466, 'mou\_opkd\_Mean': 0.39195164953461803, 'drop\_blk\_Mean': 0.13710523564206237, 'attempt\_Mean': 0.07522658231766836, 'complete\_Mean': 0.055596033551435525, 'callfwdv\_Mean': 0.6912820513251628, 'callwait\_Mean': 0.10560627644640444, 'churn': 0.0550839464252028,, 'uniqsubs': 0.0042843107252724865, 'actvsubs': 0.02115306386598126, 'totcalls': 0.8394365787030243, 'totmou': 0.5821020588762625, 'totrev': 0.8482706184857701, 'adjrev': 0.9510118382866469, 'adjmou': 0.5793674971190296, 'adjqty': 0.8359041374042231, 'avgrev': 0.02874939429093255, 'avgmou': 0.2281582821253127, 'avgqty': 0.10300869725055718, 'avg3mou': 0.15800753490062583, 'avg3qty': 0.08181307336540888, 'avg3rev': 0.018805131743332024, 'avg6mou': 0.1629987881455352, 'avg6qty': 0.08242937477152114, 'avg6rev': 0.012978974259776203, 'hnd\_price': 0.2801450862644365, 'phones': 0.4036749547555181, 'models': 0.324804396584682, 'truck': 0.3082381966782702, 'rv': 0.38473447964628676, 'lor': 0.04973172882493855, 'adults': 0.01344879495887511, 'income': 0.05226916943698074, 'numbcars': 0.007983227395965891, 'forgntvl': 0.326428320335833, 'eqpdays': 0.5972953909043894}

{

“name”: “company1”,

“employees”: 30,

“sector”: “IT”

}

{

“name”: “ahmet …”,

“gender”: “male”

}

Document Database

Key-Value ==> Redis, Memcache

Graph ==> Neo4j, orientdb

Document ==> Mongo

you need to learn (!) at least 2 of them

MSSQL - SQL Server

Oracle

Postgresql

Mysql / MongoDB

FAST API: FEATURE =

0.0.0.0:5003/docs

mina5@mina5-ThinkPad-X1-Carbon-6th:~/Desktop/code2023$ mkdir deployment

mina5@mina5-ThinkPad-X1-Carbon-6th:~/Desktop/code2023$ cp week12\_5\_ws.py deployment/

mina5@mina5-ThinkPad-X1-Carbon-6th:~/Desktop/code2023$ cp week12\_5\_model.pickle deployment/

mina5@mina5-ThinkPad-X1-Carbon-6th:~/Desktop/code2023$ cp week12\_5\_

week12\_5\_corr.csv week12\_5\_model.pickle week12\_5\_statezip.json

week12\_5\_deployment.py week12\_5\_scaler.pickle week12\_5\_ws.py

mina5@mina5-ThinkPad-X1-Carbon-6th:~/Desktop/code2023$ cp week12\_5\_statezip.json deployment/

mina5@mina5-ThinkPad-X1-Carbon-6th:~/Desktop/code2023$ cp week12\_5\_scaler.pickle deployment/

mina5@mina5-ThinkPad-X1-Carbon-6th:~/Desktop/code2023$ cd deployment/

mina5@mina5-ThinkPad-X1-Carbon-6th:~/Desktop/code2023/deployment$ l

week12\_5\_model.pickle week12\_5\_scaler.pickle week12\_5\_statezip.json week12\_5\_ws.py

mina5@mina5-ThinkPad-X1-Carbon-6th:~/Desktop/code2023/deployment$ ls -la

total 760

drwxrwxr-x 2 mina5 mina5 4096 Ağu 4 10:12 .

drwxrwxr-x 9 mina5 mina5 12288 Ağu 4 10:11 ..

-rw-rw-r-- 1 mina5 mina5 749084 Ağu 4 10:12 week12\_5\_model.pickle

-rw-rw-r-- 1 mina5 mina5 1249 Ağu 4 10:12 week12\_5\_scaler.pickle

-rw-rw-r-- 1 mina5 mina5 2320 Ağu 4 10:12 week12\_5\_statezip.json

-rw-rw-r-- 1 mina5 mina5 2935 Ağu 4 10:11 week12\_5\_ws.py

pwd = print working directory

/home/user/deploy

# get the list of running applications

ps -aux

# get the list of running applications | filtered by python

ps -aux | grep python

user 2115359 2.8 2.7 298532 108096 ? Sl 07:16 0:02 python3 week12\_5\_ws.py

# How to close a running application

kill -9 2115359

# How to list opened ports!

netstat -a

# Second approach for running a web service, mostly used for multi TERMINAL (for debugging)

screen -R myapp

… new screen

… cd deploy

… python3 week12\_5\_ws.py ! NO & is needed

**CTRL + A + D** – to exit from the SCREEN

# to close a running application : CTRL + C

# To re-attach a screen

screen -x myapp

# lists all the commands you typed before

history

# call the command line with index

!2026

1. ls – list of files
2. pwd - Print working directory command in Linux
3. cd - Linux command to navigate through directories
4. mkdir - Command used to create directories in Linux
5. mv - Move or rename files in Linux
6. cp - Similar usage as mv but for copying files in Linux
7. rm - Delete files or directories
8. touch - Create blank/empty files
9. ln - Create symbolic links (shortcuts) to other files
10. cat - Display file contents on the terminal
11. clear - Clear the terminal display
12. echo - Print any text that follows the command
13. less - Linux command to display paged outputs in the terminal
14. man - Access manual pages for all Linux commands
15. uname - Linux command to get basic information about the OS
16. whoami - Get the active username
17. tar - Command to extract and compress files in Linux
18. grep - Search for a string within an output
19. head - Return the specified number of lines from the top
20. tail - Return the specified number of lines from the bottom
21. diff - Find the difference between two files
22. cmp - Allows you to check if two files are identical
23. comm - Combines the functionality of diff and cmp
24. sort - Linux command to sort the content of a file while outputting
25. export - Export environment variables in Linux
26. zip - Zip files in Linux
27. unzip - Unzip files in Linux
28. ssh - Secure Shell command in Linux
29. service - Linux command to start and stop services
30. ps - Display active processes
31. kill and killall - Kill active processes by process ID or name
32. df - Display disk filesystem information
33. mount - Mount file systems in Linux
34. chmod - Command to change file permissions
35. chown - Command for granting ownership of files or folders
36. ifconfig - Display network interfaces and IP addresses
37. traceroute - Trace all the network hops to reach the destination
38. wget - Direct download files from the internet
39. ufw - Firewall command
40. iptables - Base firewall for all other firewall utilities to interface with
41. apt, pacman, yum, rpm - Package managers depending on the distro
42. sudo - Command to escalate privileges in Linux
43. cal - View a command-line calendar
44. alias - Create custom shortcuts for your regularly used commands
45. dd - Majorly used for creating bootable USB sticks
46. whereis - Locate the binary, source, and manual pages for a command
47. whatis - Find what a command is used for
48. top - View active processes live with their system usage
49. useradd and usermod - Add new user or change existing users data
50. passwd - Create or update passwords for existing users