Date:- 25 May 20

Course:- Digital Signal processing

Topic:- Day 1

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Sem & Sec:- 6th sem & B section

* Fourier transfer and wavelets coordinate transform

$$u(x, y, t)$$

$$u_t = \alpha \nabla^2 u$$

SVD: data - drive FFT

* FFT:- fast fourier transform is used to process as audio signals, video etc by compressing and representing efficiently by using FFT.

$$f(t) = \frac{1}{2} a_0 + \sum_{k=1}^{\infty} (a_k \cos 2\pi kt + b_k \sin 2\pi kt)$$

where $k \rightarrow$ frequency

$a_k, b_k \rightarrow$ coefficient

* fourier transform:-

$$X_a(F) = \int_{-\infty}^{\infty} x(t) \cos 2\pi ft \, dt,$$

$$X_b(F) = \int_{-\infty}^{\infty} x(t) \sin 2\pi_f t \, dt,$$

$$X(F) = \int_{-\infty}^{\infty} x(t) e^{-j2\pi ft} \, dt.$$

* Continues FT:- $X(f) = \int_{-\infty}^{\infty} x(t) e^{-j2\pi ft} \, dt.$

* discrete FT:- $x_k = \sum_{n=0}^{N-1} x_n e^{-\frac{j2\pi kn}{N}}$

* Inner products in Hilbert space:-

$$\langle f(x), g(x) \rangle = \int_a^b f(x) g(x) \, dx.$$

Fauries series using Maths:-

```
clear all, close all, clc
figure
set (get, position; [1500, 200, 2000, 1200])
L = Pi;
N = 1024;
dx = 2+ L / (N-1);
x = -L :dx : L;
f = 0. x;
f (N/4 : N/2) = 4 * (1 : N/4 + 1)/N;
f (N/2+1 ; 3* N/4) = 1- 4* (0 : N/4 -1)N;
plot (x, f, -k ; 'Lene width', 3:5), hold on
ec = jet(20);
A 0 = sum (f. * ones (size(x)) * dx/ pi ;
fFS = A0/2.
for k=1 : 20
    A(k) = sum (y. * cos ( pi * x/L) * dx/pi ;
    B(k) = sum (y. * sin (pi * k * x/L) * dx/pi;
    yFS = fFS + A(k) * cos (k * pi * x/L) + B(k) * sin
                                        (k * pi * x/L);
plot (x, fFS, '-', 'color', c(k,i): Lene width', 2)
  pause (.1)
end.
```

Fourier series using python.

⇒ In [ ]:
```
import numpy as np
import matplotlib.pyplot as plt
from matplotlib.cm import get_cmap
plt.rcParams['figure.figsize']=[8,8]
plt.rcParams.update({'font.size':18})
dx = 0.001
L = np.pi
x = L*np.arange(-1+dx, 1+8x, dx)
n = len(x)
nquart = int(np.floor(n/4))
```

```
t = np.zeros_like(x)
t[nquart:2+nquart] = (4/n)*np.arrang(1, nquart+1)
t[2*nquart:3*nquart] = np.ones(nquart) -
                       (4/0)*np.arrange(0, nquart+1)
fig, ax = plt.subplots()
ax.plot(x, t, color='k', linewidth=2)
```

Date: 25 May 20a

Course: - Python

Topic:- Application 4

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Sem & Sec: 6th sem B sect

* I learnt, how the output will look like in case of personal website.
* python website blocker is to block some certain websites which can distract the user during the specified amount of time.
* Every system has host file whether its MAC, windows or Linux.
* Host file in windows: C:\Windows\System32\drivers\etc
* If we deployed our website on Heroku but when we visit the website on the browser we will see an error, we probably did something wrong during the deployment
* Then we will get to know the wrong by looking server Logs, You can access the server logs by running the following in your terminal: heroku logs
* Using python file handling manipulation, we will write the host name in hosts.txt and remove the lines after our working hours.
* Python can be used to build server-side web applications
* However, most python develops write their web applications using combination of python and Java script.
* Python is executed on the server side while Java script is downloaded to the client and run by the web browser

* After this process on different operating systems, there are certain set of sets to be followed on desktop to make the website blocker work
* After the settings are completed the system has to be restarted. And finally the website blocker works.