To ask   
  
Pycharm not working for Mac

26th March

1. SAR imaging

2. RADAR has to move and send pulses with that image is created

3. raw Intermediate frequency signal (IFS) is needed

4. range azimuth plot range and azimuth angle and radar return ( energy )

5. both static object and moving object

6. classification based on radar signature

7. data needed - on laptop

download config file

range 0.041

distance less than 5 m

frame rate - less than 5

screen shot of image - azimuth range heatmap

indoor data ( radar fixed ) ( different places ) ( 4 location)

empty screen

with person at right and left of radar

with metal left and right

8. https://github.com/debjyotiC/radar-sar-edge/tree/main/data

27th March

1. in the rooms data is getting suppressed because of objects around

2. collect data in big room

3. increase the distance and collect data (1m, 2m, 3m)

4. try to keep the disturbance ( metal things ) more than 5 m

5. collect data outside with cars around.

6. same location different points ( max data needed)

28th March

1. API is needed to show what is detected.

2. unique signature for each of different objects.

3. 1fps signature for 10 seconds implies 10 sig

4. tick range profile and range azimuth plot

5. download the dat file

6. no need of screenshot

7. car man no man tree : cases

8. 1fps 10seconds data

9. less han 5m

01st April

1. Repeat outdoor experiment

2. Select Range only

3. Indoor data with chair man and no man

4. Hall data is good ( with less noise )

5. 5m distance.

6. Height difference between people

7. one object and 2 people

8. radar is static and person also static

02nd April

1. Repeat the outdoor experiment

2. stack chairs

3. select only range profile and dowload dat file

4. no man, man 1, man 2, chairs, tree

5. different locations outdoor

15th April

1. 20sec data

2. 1fps data rate

3. 2 person

4. different distances from radar

5. outdoor both static

6. equal times empty scene

7. range profile

23rd April

1. classifer working fine

2. accuracy 96%

3. data for UGV, spot

4. range profile 10 seconds 1 fps

5. empty at once, both the robots at varying distance

24th April

1. more and  more data

2. classification is done correct

29th April

new code working

1. convert into nympy file

2. extraction of features ( nature of reflected energy)

3. ML needed

10th May

1. moving average - temporal filtering | noise cancellation

2. peak detection in range profile

cell averaging filter

3. plot and check with threshold

4. json response

object found

what object

at what distance

5. detection : DSP

classification : ML

6. smoke data - empty field and static person

with and without smoke

(with bunker)

14th May

1. threshold is 70 for him

2. change threshold value in line 42

3. seeing sum change threshold

4. pip install -r requirements.txt

5. completely empty field check threshold

6. bring objects infront of it. man | robots. - threshold values.

7. with smoke, empty and man

8. working :

the sum value for empty is 20-30

the sum value when a person was there infront of the radar at 3-4 m distance was 60-80

we changed the threshold value to 55

when the person was moving infront of it the threshold value was dropping down.

when the person was static infront of it

it was working perfect

17th May

Outdoor observations :

1. the model doesn't detect ( gives false postives when the target is in motion )

2. noise is not completely removed

3. works fine when the target is static and when the scene is empty

Things to consider :

1. when the target is in motion

2. reduce noise

3. if the tunnel gets detected as obstacle

Clarification:

1. since range data is being used the target has to be static to get detected

2. using range data reduces the number of transmitter and receiver antenna to 1 and this makes the radar to act as a laser beam (which reduces the noise)

3. if the target is in motion, need to switch back to use Doppler - Range data.

28th May

1. download the database file to the existing device. | it is in sql db format. can convert it into json file.

2. it has flag, decision, sum value, threshold value

3. https://github.com/debjyotiC/radar-object-detection - new repo

4.  https://sqlitebrowser.org/dl/ - to open db file

5. ask tamil - json format where to be sent and what is to be sent ( flag ) | if websocket would be better |

Observations :

1. moving not getting detected

2. everything find db downloading

to do :

1. range doppler plot

2. moving data

1. to check it on spot

2. to check with respect to angle

3. to update it on the database. - need to update it to the exisiting db file on the server ( with other ip you can access that )

            - change the boolen format to string

29th May

1. test with spot moving and person

2. need to update code to write status in database.

4th June

https://github.com/debjyotiC/rpi-radar-object-detector-client

Visualisation

run threading code

threading : classifer + server

if db is off error will come

line 73

comment when database is off

to get it updated to db uncomment this

not a web socket now

client has to be ready to receive packets.

run client.py on the client side

run the threading.py on raspberry pi

5th June

to execute visualisation and range detector code ( along with db update )

after turning on the pi on laptop

1. ssh cards@192.168.1.61

2. cd rpi-radar-object-detector-server/

3. python3 threading\_code.py

4. take note of IP address : 192.168.1.61:5001

open pycharm on the laptop

1. execute client.py

2. click on the IP address : http://127.0.0.1:5000

3. enter the IP address, 192.168.1.61:5001 click start

10th June

rest API - faster than web socket

laptop will be a broadcast and the data can be streamed to other devices

latency is reduced

required data :

range doppler data

range 5 m

empty and moving in different places