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Unit 4 - Localization in IoT - Part 2

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Course outline

How to access the portal

MATLAB Online Access and Learning Modules

Localization in IoT - Part 1

Localization in IoT - Part 2

- Localization using IMU sensors - I
- Localization using IMU sensors - II
- Localization using IMU sensors - III
- RFID based localization - I
- RFID based localization - II
- Quiz : Week 2 Assessment

Sensors and protocols for next generation automobiles

Week 2 Assessment

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-02-13, 23:59 IST

1) Which of following will introduce an offset to the phase readings obtained by RFID reader? ***1 point***

- Reader's transmit circuits
- Tag's reflection characteristic
- Reader's receiver circuits
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above

2) "RFID based localization" technique used in FMCW radar is ***1 point***

- TD-PDOA
- FD-PDOA
- SD-PDOA
- Hyperbola positioning

No, the answer is incorrect.
Score: 0

Accepted Answers:
FD-PDOA

3) Using DBSCAN clustering algorithm,which one of the following points is an outlier for epsilon=40 , with min number of points=3 ***1 point***

Points = (-70,84),(-100,117),(-33,50),(-72,95),(-132,141),(-55,74)

- (-70,84)

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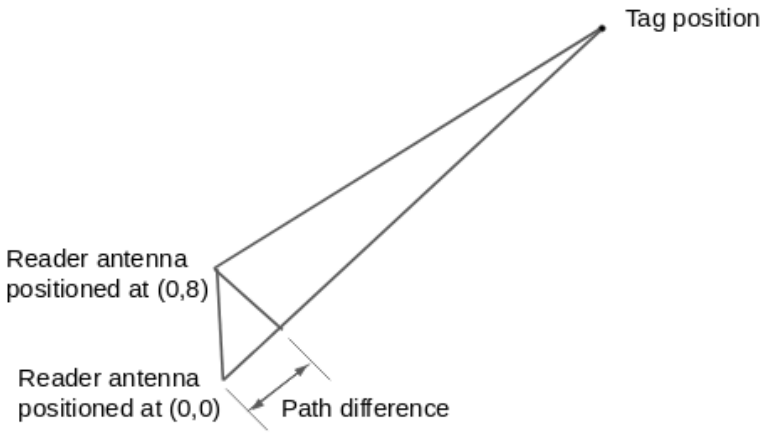
Accepted Answers:
(-132,141)

4) Considering the hyperbola positioning demonstration shown in the "RFID based localization" lecture, calculate the path difference from the data given below. **1 point**



Given :
Frequency of operation is 865MHz.
Phase of tag read by the reader positioned at (0,0) = [154.0, 151.0, 149.0, 140.0, 146.0, 143.0, 163.0, 151.0, 160.0, 137.0, 135.0, 157.0, 163.0, 101.0, 123.0, 104.0, 106.0, 109.0, 112.0, 118.0] (take an average of all phase values obtain theta_one) and Phase of tag read by the reader positioned at (0,8) = [56.0, 70.0, 59.0, 50.0, 47.0, 45.0, 42.0, 53.0, 64.0, 61.0, 50.0, 5.0, 2.0, 11.0, 98.0, 90.0, 84.0, 92.0, 87.0, 95.0] (take an average of all phase values obtain theta_two)

- 3.76 cms
- 1.8 cms
- 5.8 cms
- 9 cms

No, the answer is incorrect.
Score: 0

Accepted Answers:
3.76 cms

5) In TD-PDOA technique of "RFID based localisation" lecture, which one is the correct statement? **1 point**

- Reader and tag are stationary
- Reader and tag are mobile
- Either reader or tag is stationary and the counterpart is mobile
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Either reader or tag is stationary and the counterpart is mobile

6) Which among the following helps us to obtain the orientation of the phone for "Localization using IMU sensors" **1 point**

- Acceleration
- Magnetic field intensity
- Gravity
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Gravity

7) In "Localization using IMU sensors" , Weinberg's principle for stride length estimation considers the following **1 point**

- Linear acceleration produced while taking steps
- Vertical bounce observed while taking steps
- Both a and b
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Vertical bounce observed while taking steps

8) Denoising accelerometer values for "Localization using IMU sensors" will account the following **1 point**

- Right Cut off frequency
- Optimum roll off factor
- Both a and b
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both a and b

9) In "Localization using IMU sensors", the process to check if the phone is held in Left/Right hand is: **1 point**

- Using Gravity
- Using Accelerometer values
- Using Magnetometer values
- Using Barometer values

No, the answer is incorrect.
Score: 0

Accepted Answers:
Using Gravity

10) In "Localization using IMU sensors", extensive filtering of IMU sensor reads leads to the following **1 point**

- Enhance the signal of interest
- Better stride length estimation
- Both a and b
- Inaccurate results

No, the answer is incorrect.
Score: 0

Accepted Answers:
Inaccurate results

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