

Homework due Jul 13, 2021 22:00 +06

Exercise 3

A list of numbers representing measurements obtained from a system of interest can often be noisy. One way to deal with noise is to smooth the values by replacing each value with the average of the value and the values of its neighbors. We will practice data smoothing in this three-part exercise.

Exercise 3b

1/1 point (graded)

Compute and store `R=1000` random values from 0-1 as `x`.

Compute the moving window average for `x` for values of `n_neighbors` ranging from 1 to 9 inclusive.

Store `x` as well as each of these averages as consecutive lists in a list called `Y`.

Use this code to get started:

```
random.seed(1) # This line fixes the value called by your function,
                # and is used for answer-checking.

# write your code here!
```

What is the moving window average for the 10th entry in `x` for `n_neighbors = 5`?

0.45325045824763405



0.45325045824763405

Submit

You have used 3 of 10

attempts

✓ Correct (1/1 point)

Exercise 3c

1/1 point (graded)

For each list in `y`, calculate and store the range (the maximum minus the minimum) in a new list `ranges`.

Print your answer. As the window width increases, does the range of each list increase or decrease? Why do you think that is?

As window width increases, does the range of each list increase or decrease?

☐ increase

☒ decrease



Submit

You have used 1 of 1 attempt

✓ Correct (1/1 point)