one_stationary Experiment Report

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This is a summary of the data from the one_stationary experiment.

Shown below is the summary of the error of all robots combined for both x and y coordinates, and also the error in total distance.

```
summary(continuous$x_error)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   2.000   2.001   2.001   2.001   2.002   2.002
```

```
summary(continuous$y_error)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##       2       2       2       2       2       2
```

```
summary(continuous$dist_error)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   2.828   2.829   2.829   2.829   2.830   2.830
```

```
summary(discrete$x_error)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## 1.266e-06 3.129e-06 4.976e-06 5.264e-06 7.403e-06 9.310e-06
```

```
summary(discrete$y_error)
```

```
##       Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## -4.717e-09  1.316e-09  3.633e-09  4.342e-09  6.647e-09  1.794e-08
```

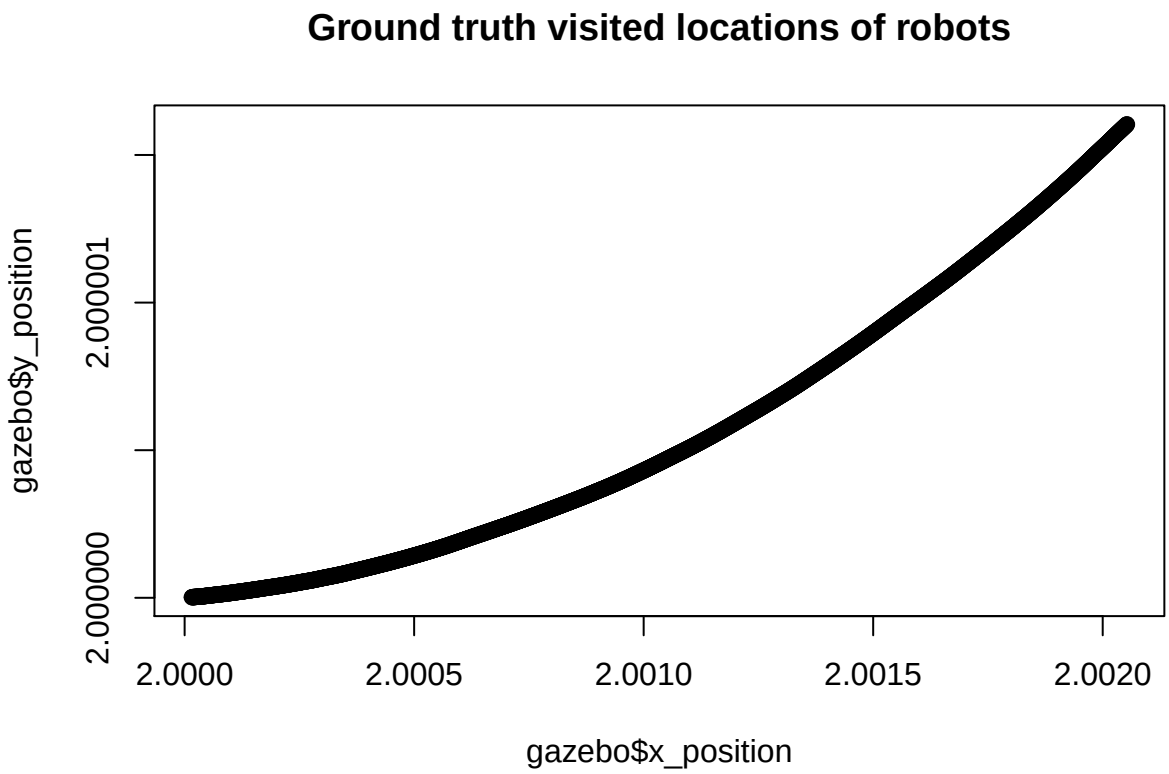
```
summary(discrete$dist_error)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## 1.266e-06 3.129e-06 4.976e-06 5.264e-06 7.403e-06 9.310e-06
```

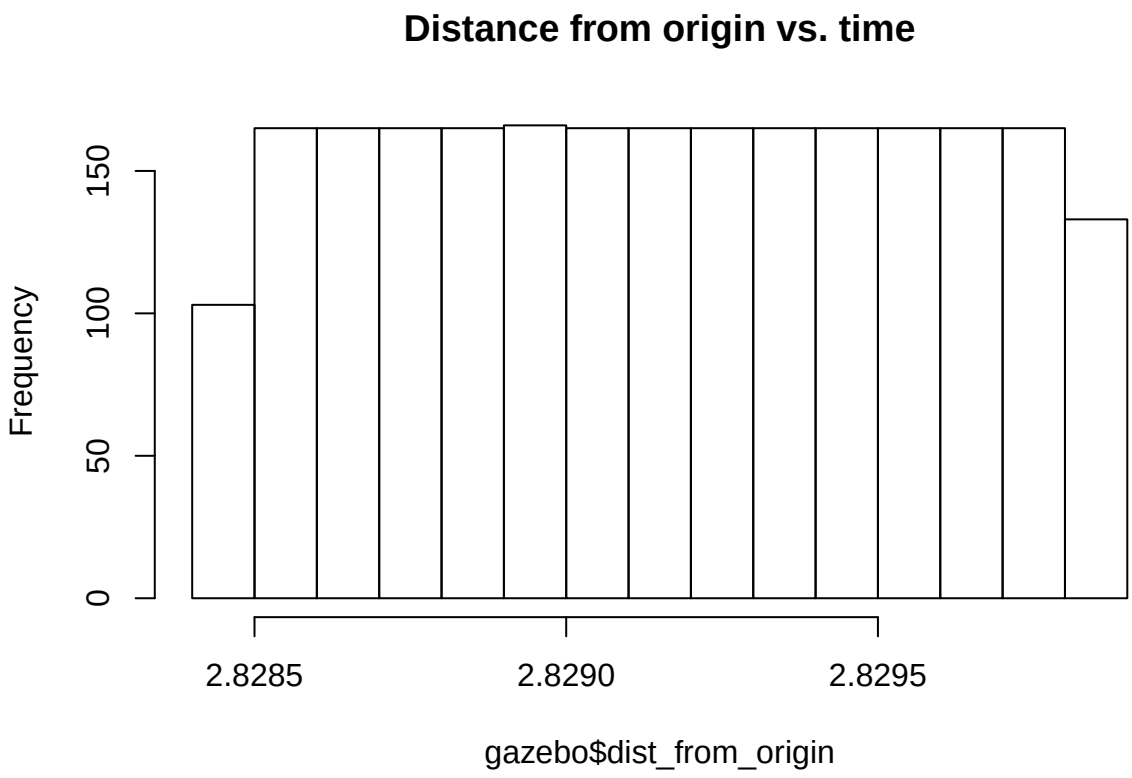
```
if (params$robot >= 2) {
    summary(external_data_averages)
}
```

Shown below are plots representing the robot's motion and error over time.

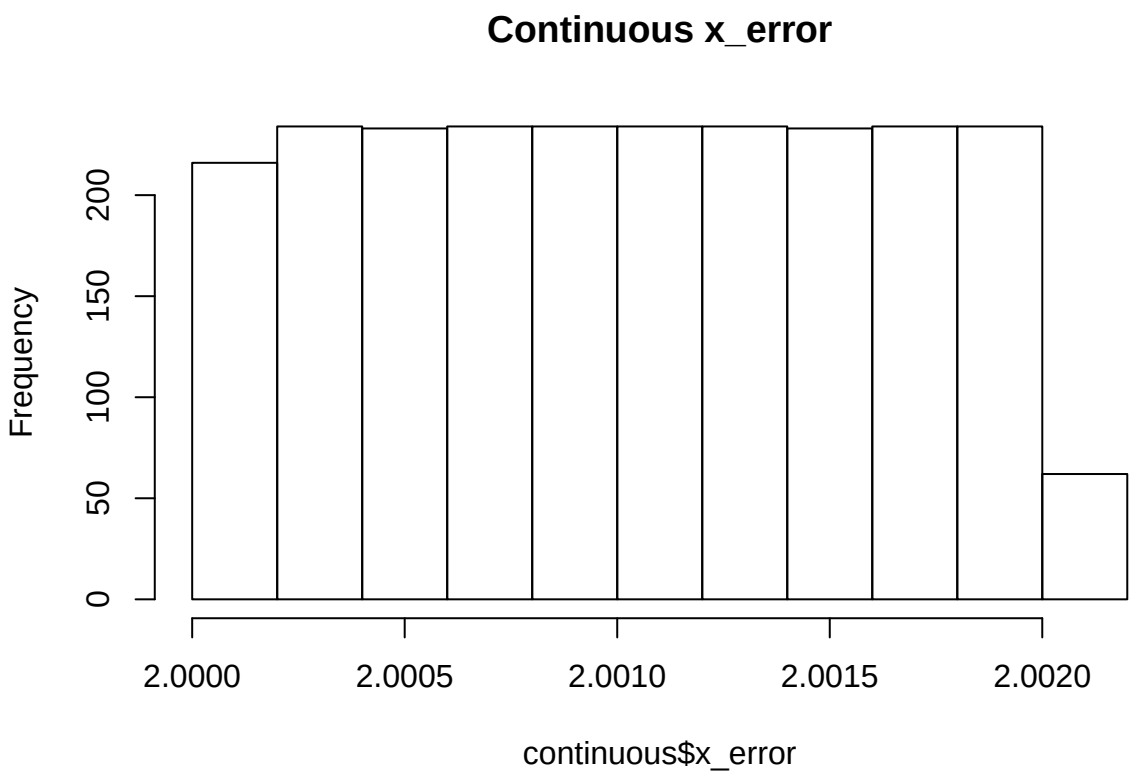
```r
plot(gazebo$x_position, gazebo$y_position,
     main = "Ground truth visited locations of robots")
```



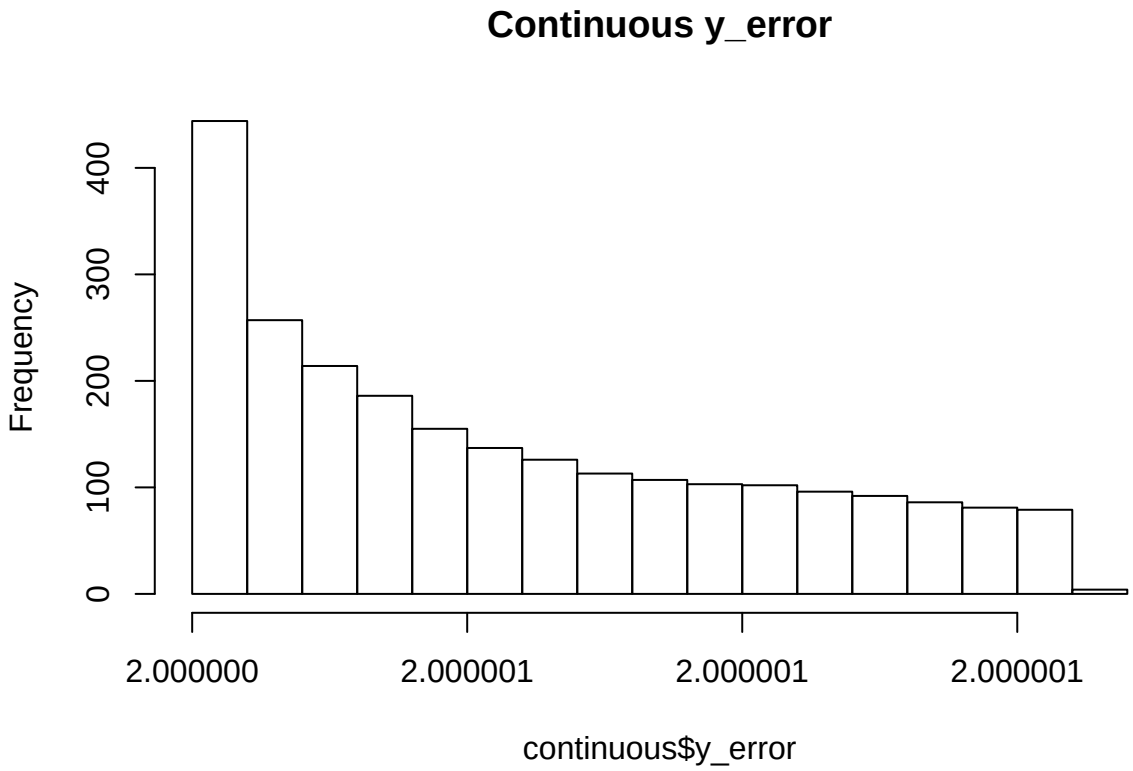

```r
hist(gazebo$dist_from_origin,
     main = "Distance from origin vs. time")
```



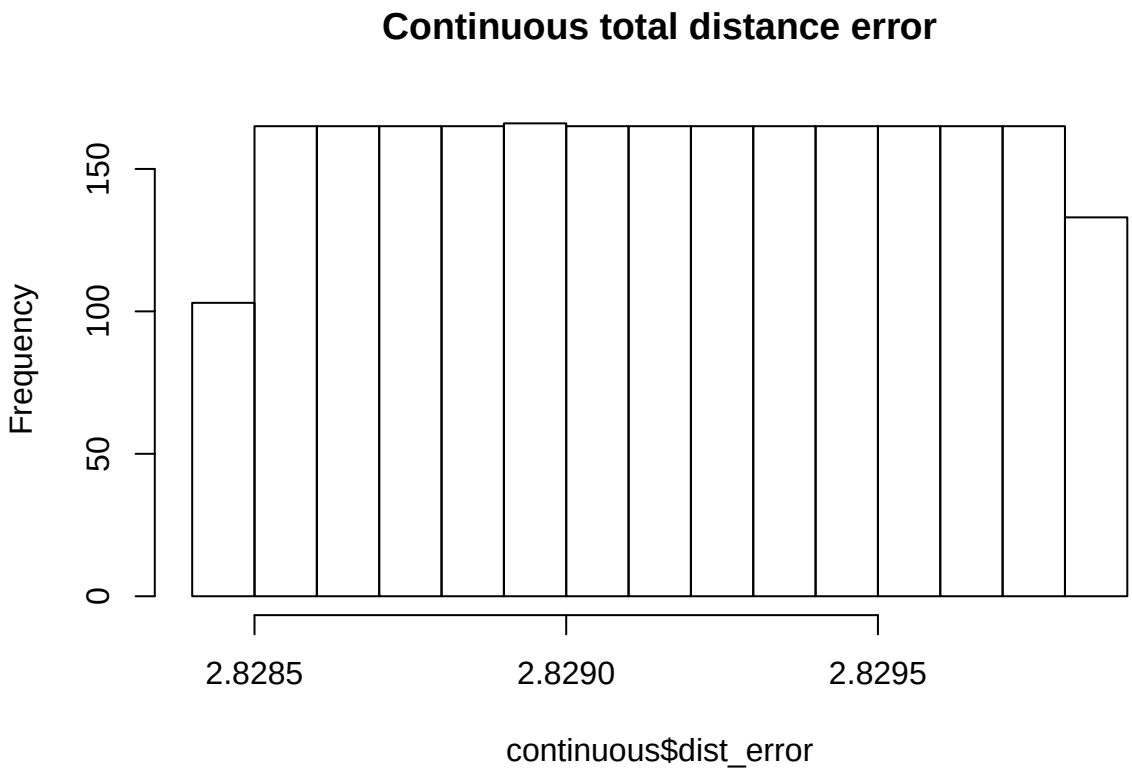

```
hist(continuous$x_error,
     main = "Continuous x_error")
```



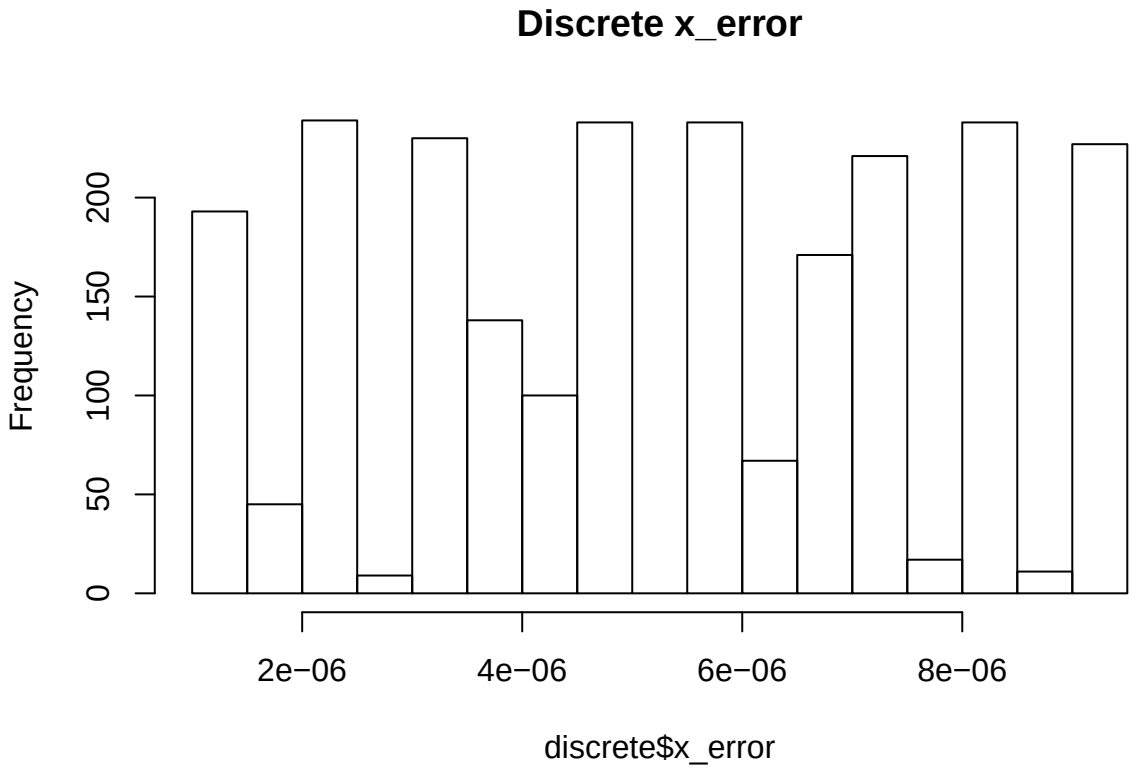
```r
hist(continuous$y_error,
     main = "Continuous y_error")
```



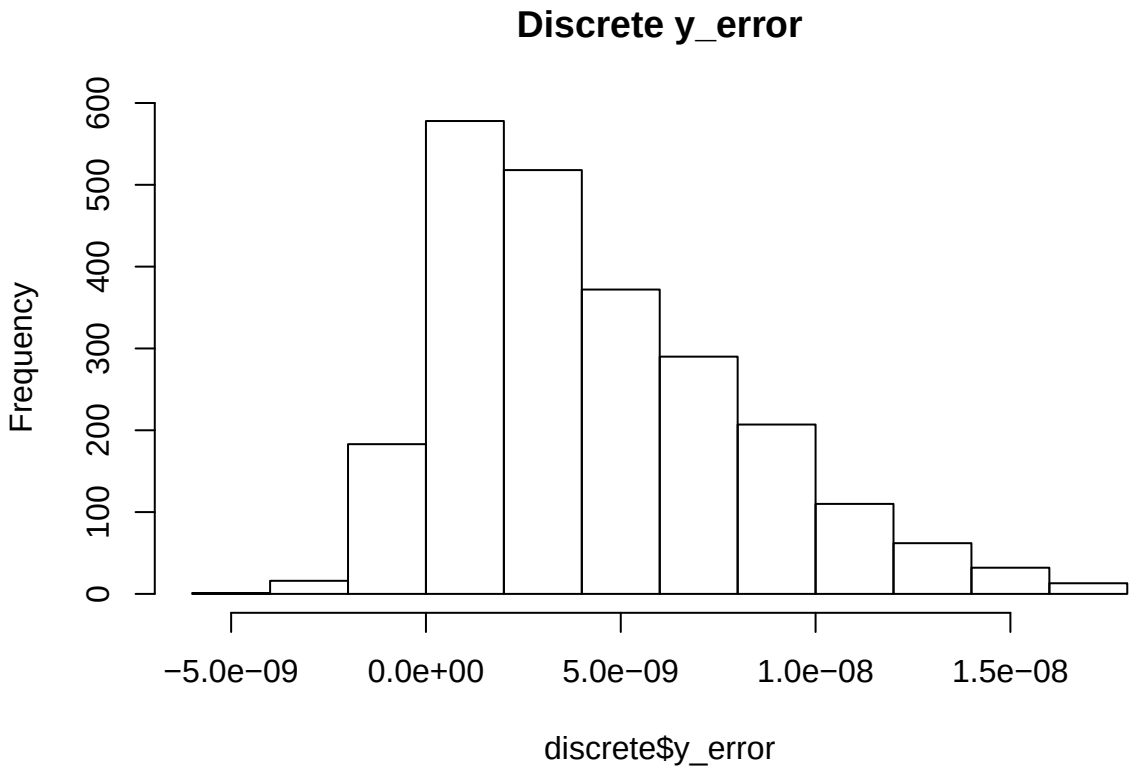

```r
hist(continuous$dist_error,
     main = "Continuous total distance error")
```



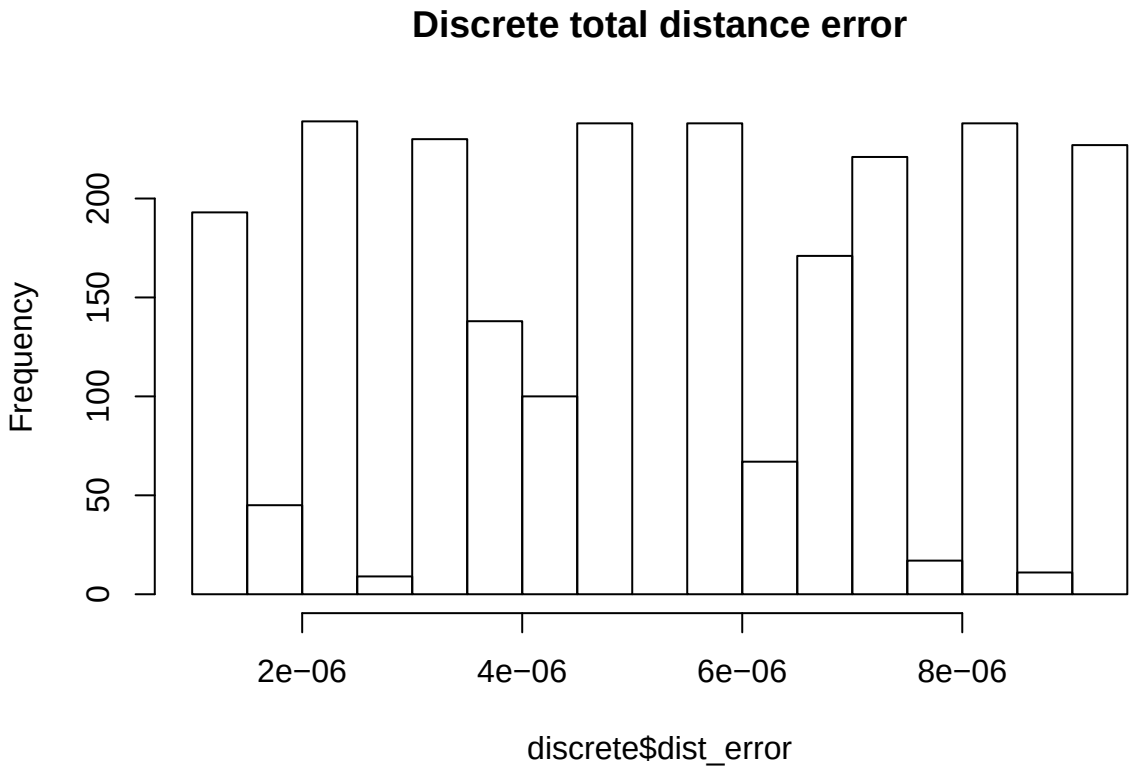

```
hist(discrete$x_error,
     main = "Discrete x_error")
```



```r
hist(discrete$y_error,
     main = "Discrete y_error")
```




```r
hist (discrete$dist_error,
      main = "Discrete total distance error")
```


Discrete total distance error
Frequency
0
50
100
150
200
2e−06
4e−06
6e−06
8e−06
discrete$dist_error