one_mobile.R

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```
t1_gazebo <- read.csv("~/thesis/experiment_data/one_mobile/turtlebot1_gazebo_odometry_filtered.csv")
t1_continuous <- read.csv("~/thesis/experiment_data/one_mobile/turtlebot1_continuous_odometry_filtered.
t1_discrete <- read.csv("~/thesis/experiment_data/one_mobile/turtlebot1_discrete_odometry_filtered.csv"
t1_external_count <- read.csv("~/thesis/experiment_data/one_mobile/turtlebot1_external_pose_count.csv")

t1_gazebo$dist_from_origin <- sqrt(t1_gazebo$x_position ^ 2 + t1_gazebo$y_position ^ 2)

t1_discrete$x_error <- t1_gazebo$x_position - t1_discrete$x_position
t1_discrete$y_error <- t1_gazebo$y_position - t1_discrete$y_position
t1_discrete$dist_error <- sqrt(t1_discrete$x_error ^ 2 + t1_discrete$y_error ^ 2)

t1_continuous$x_error <- t1_gazebo$x_position - t1_continuous$x_position
t1_continuous$y_error <- t1_gazebo$y_position - t1_continuous$y_position
t1_continuous$dist_error <- sqrt(t1_continuous$x_error ^ 2 + t1_continuous$y_error ^ 2)

pdf("one_mobile_ground_truth_locations.pdf")
plot(t1_gazebo$x_position, t1_gazebo$y_position)
title("Ground truth visited locations of robot")
dev.off()
```

```
## pdf
##   2
```

```
pdf("one_mobile_dist_from_origin.pdf")
plot(t1_gazebo$dist_from_origin)
title("Distance from origin vs. time")
dev.off()
```

```
## pdf
##   2
```

```
summary(t1_discrete$x_error)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## -29.71000 -20.41000 -13.14000 -14.48000  -8.34800   0.03365
```

```
summary(t1_discrete$y_error)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  -7.977  -1.296   5.912   7.865  17.490  30.840
```

```
summary(t1_discrete$dist_error)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   9.101  14.840  18.140  26.360  40.460
```

```r
summary(t1_continuous$x_error)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## -0.530000 -0.347200 -0.287900 -0.298000 -0.227800  0.008619
```

```r
summary(t1_continuous$y_error)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
## -0.33330 -0.28980 -0.23450 -0.09223  0.13370  0.28080
```

```r
summary(t1_continuous$dist_error)
```

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## 0.0000009 0.3346000 0.3766000 0.3778000 0.4166000 0.5400000
```