two_mobile_noisy_false Experiment Report

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This is a summary of the data from the two_mobile_noisy_false 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.
## -6.873e-02 -5.281e-03  2.230e-06  7.937e-05  5.484e-03  7.043e-02
```

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

```
##       Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## -6.665e-02 -5.018e-03 -1.450e-06  1.106e-04  5.622e-03  6.629e-02
```

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

```
##       Min.   1st Qu.     Median       Mean   3rd Qu.       Max.
## 5.000e-08 4.742e-04  1.250e-02  1.873e-02 3.661e-02 7.189e-02
```

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

```
##       Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## -1.2020000 -0.0109300  0.0000023  0.0001959  0.0122700  1.2270000
```

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

```
##       Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## -0.7844000 -0.0114700 -0.0000008  0.0018090  0.0125400  1.1800000
```

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

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
## 0.000000 0.001271 0.028280 0.062350 0.053000 1.248000
```

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

```
##      Length Class  Mode
## [1,] 1      -none- numeric
## [2,] 1      -none- numeric
```

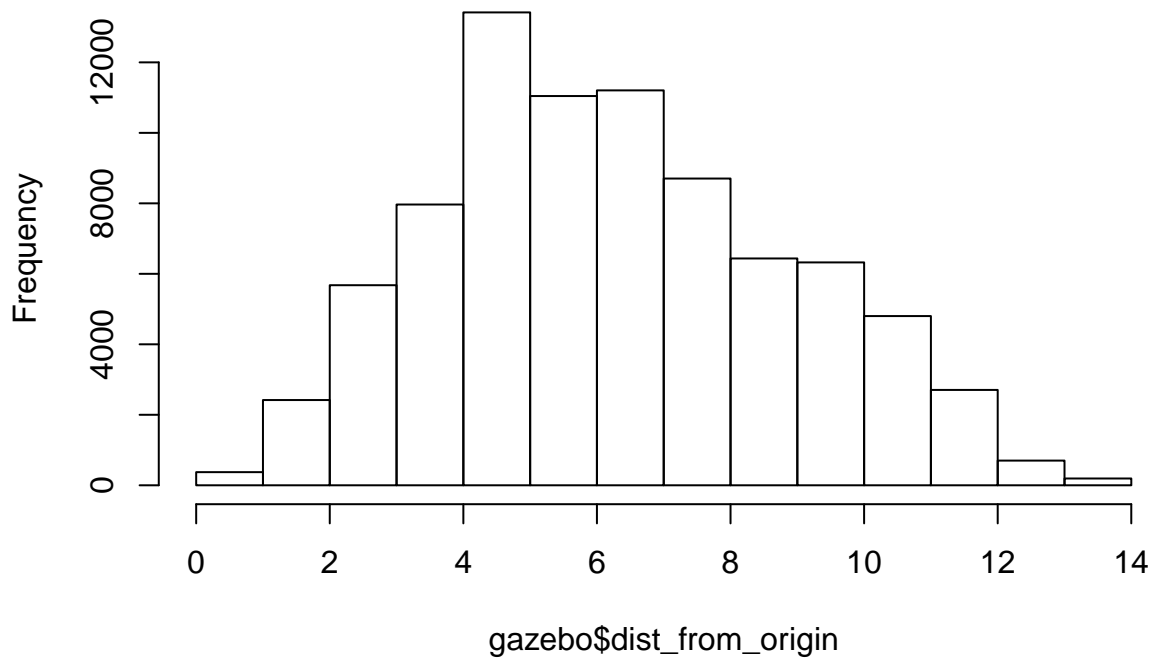Shown below are plots representing the robot's motion and error over time.

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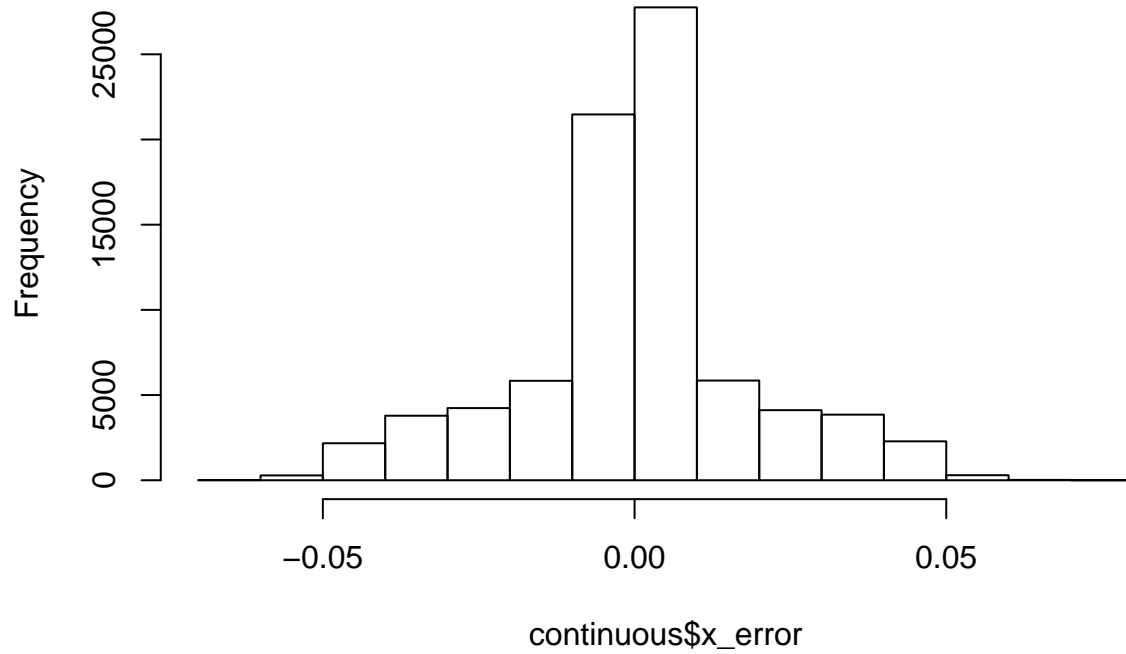```

## Ground truth visited locations of robots



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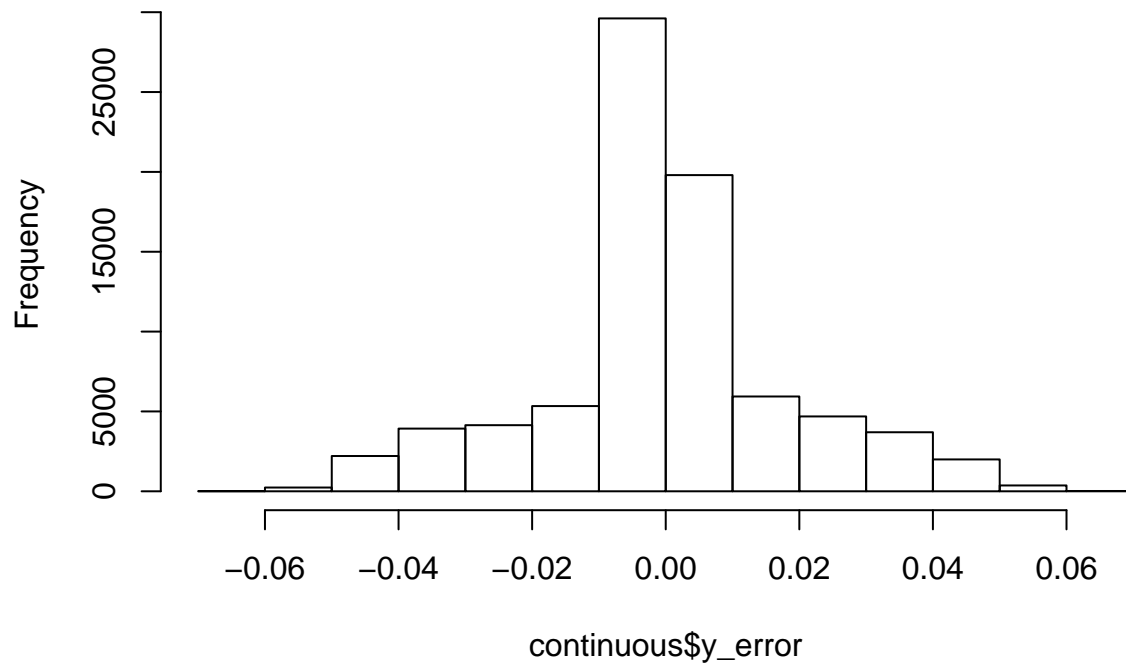
Distance from origin vs. time


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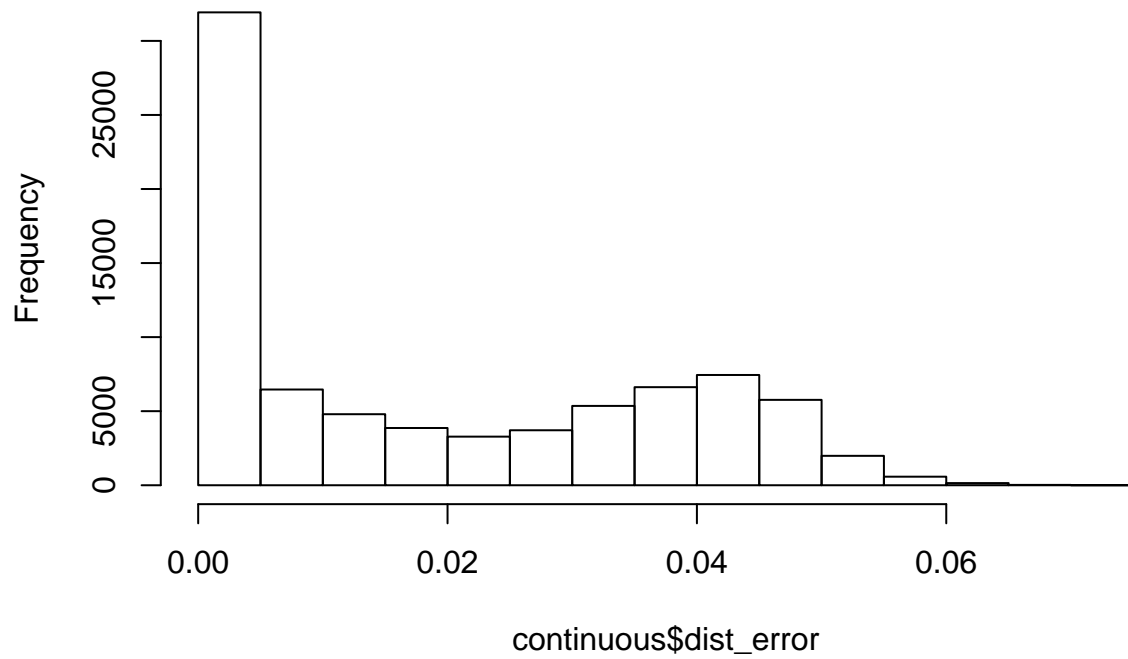
Continuous x_error


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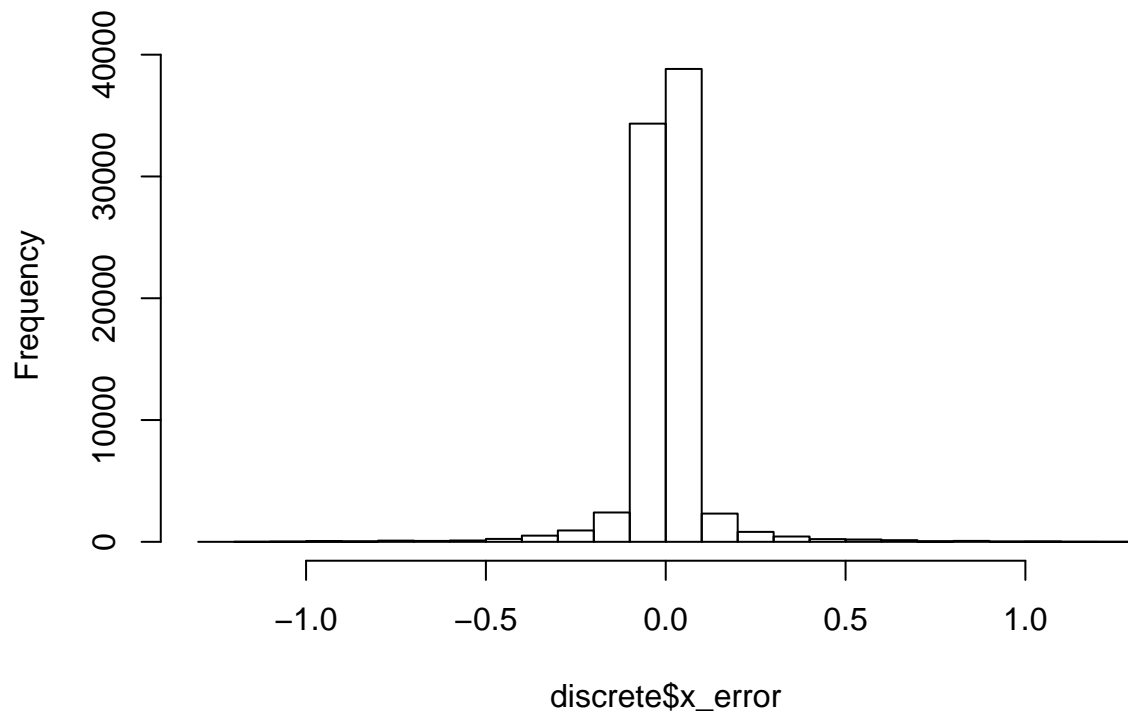
Continuous y_error


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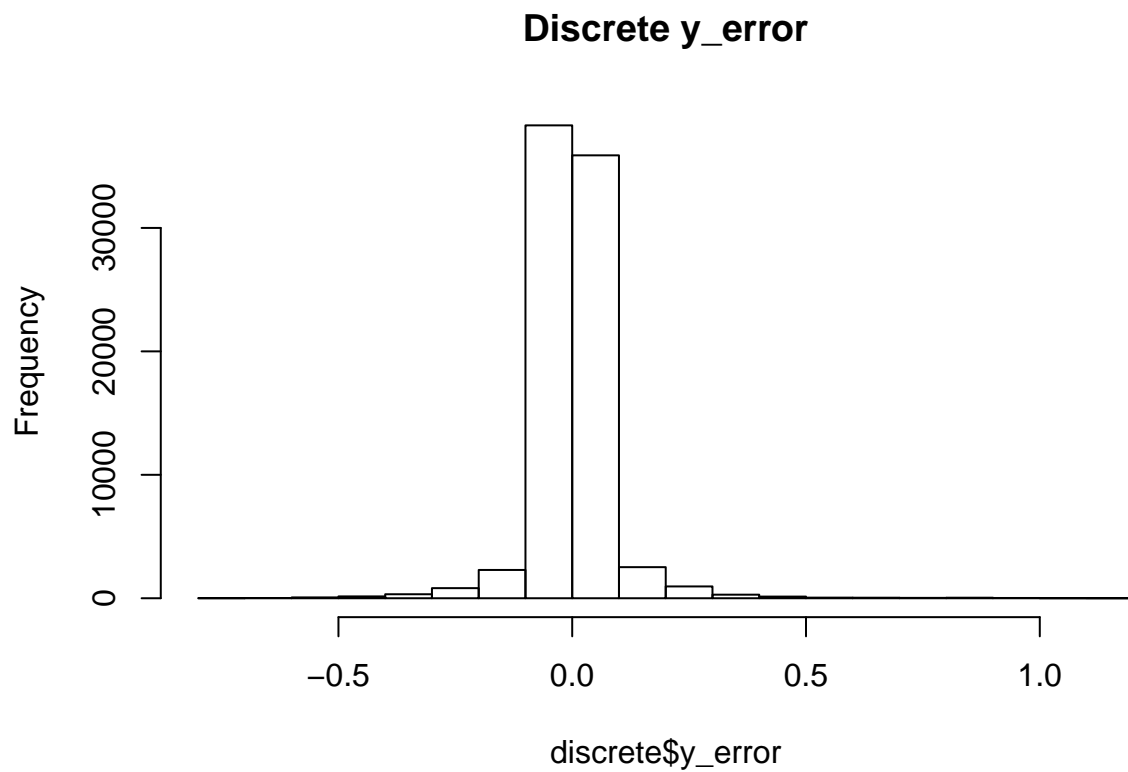
Continuous total distance error


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

Discrete x_error


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

Discrete y_error


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

Discrete total distance error