Bluetooth Tracking Report

ObstacleTest.csv

February 14, 2025

1 1D b1d_distance

Figure 1: b1d Distance Over Time

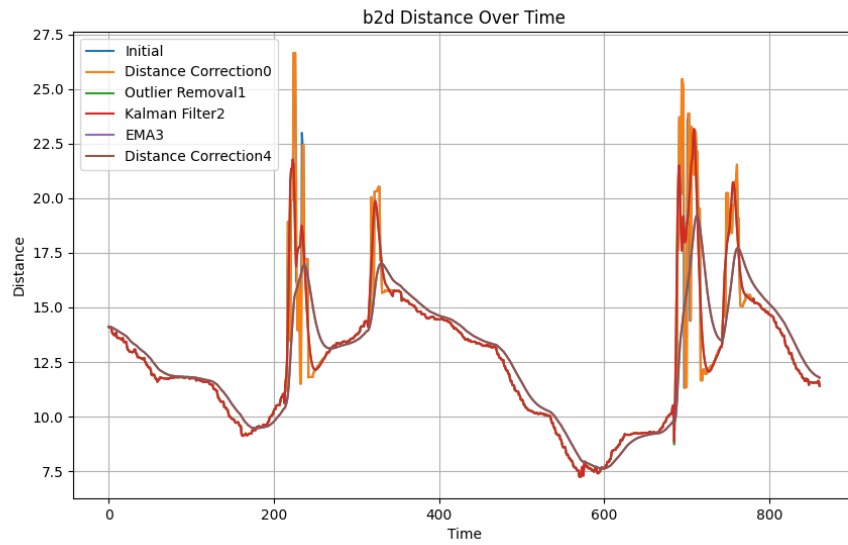# 2   1D b2d_distance

Figure 2: b2d Distance Over Time
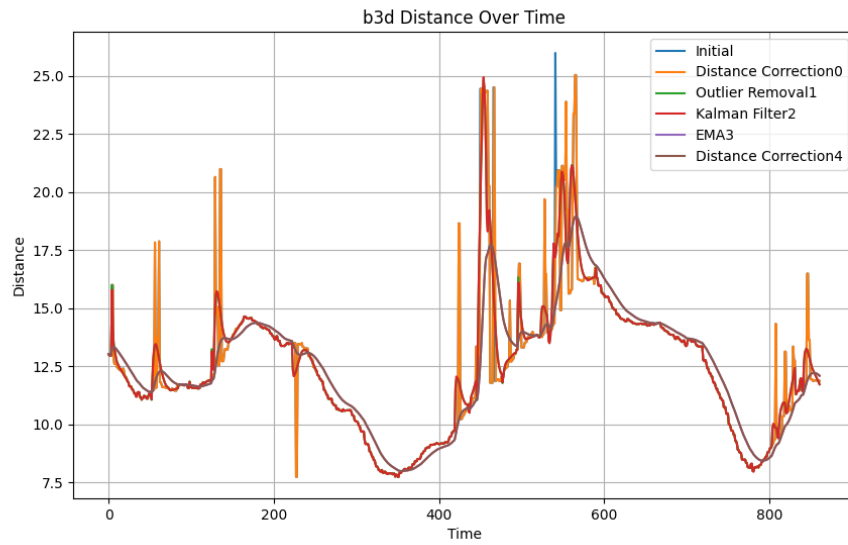
3 1D b3d_distance

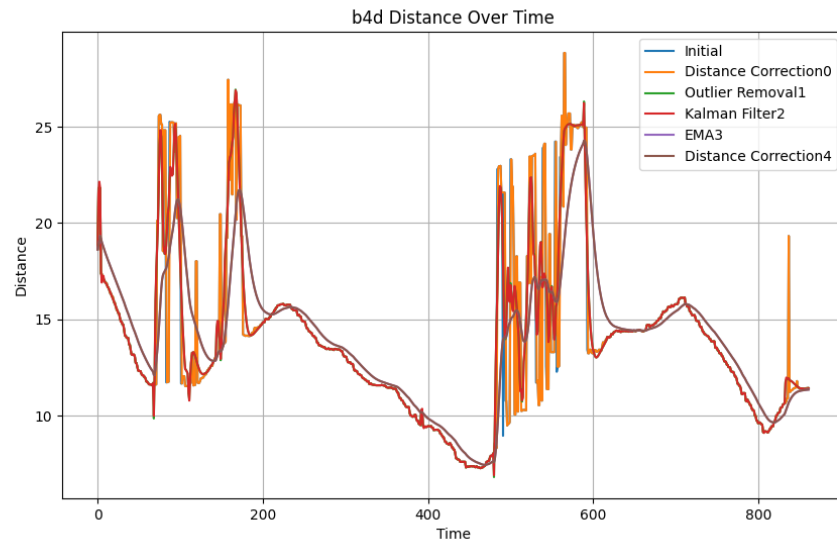Figure 3: b3d Distance Over Time

4   1D b4d_distance

Figure 4: b4d Distance Over Time

5 Initial - Ground Truth

Anchor 1: MAE=4.204 m, RMSE=7.727 m
Anchor 2: MAE=4.398 m, RMSE=5.247 m
Anchor 3: MAE=3.274 m, RMSE=4.804 m
Anchor 4: MAE=3.726 m, RMSE=6.322 m

Figure 5: Initial Measured vs GT Distance

6 Distance Correction0 - Ground Truth

Anchor 1: MAE=4.204 m, RMSE=7.727 m
Anchor 2: MAE=4.398 m, RMSE=5.247 m
Anchor 3: MAE=3.274 m, RMSE=4.804 m
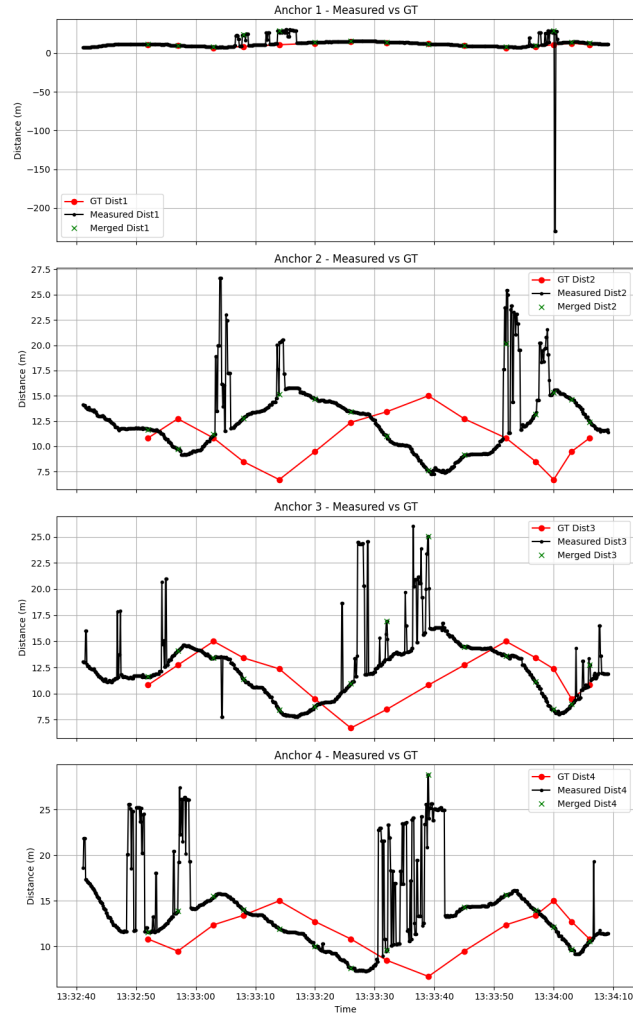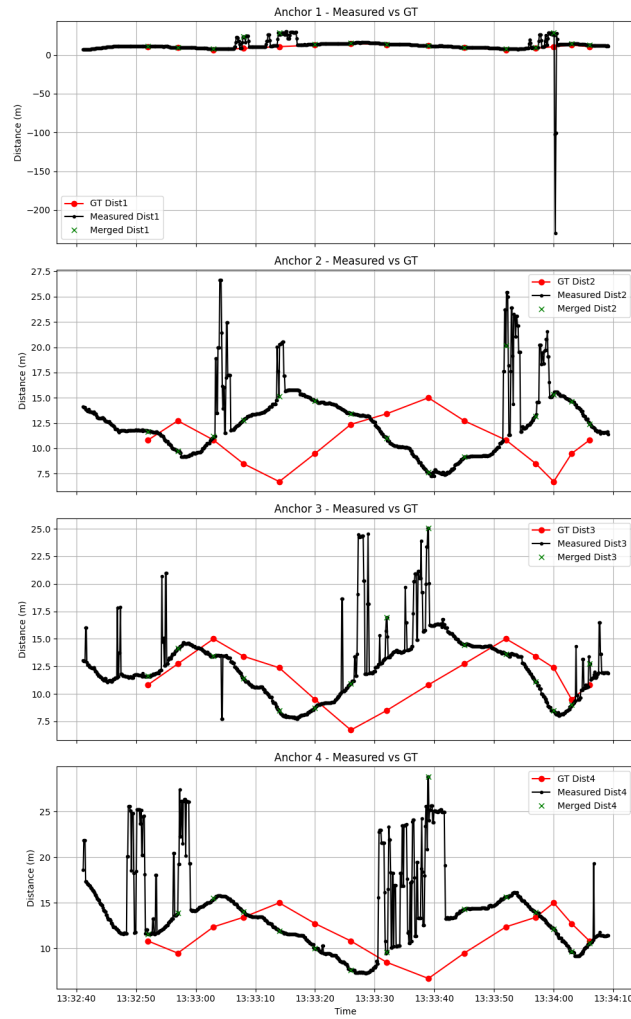Anchor 4: MAE=3.726 m, RMSE=6.322 m

Figure 6: Distance Correction0 Measured vs GT Distance

7 Outlier Removal1 - Ground Truth

Anchor 1: MAE=5.800 m, RMSE=13.003 m
Anchor 2: MAE=4.609 m, RMSE=5.636 m
Anchor 3: MAE=2.784 m, RMSE=3.614 m
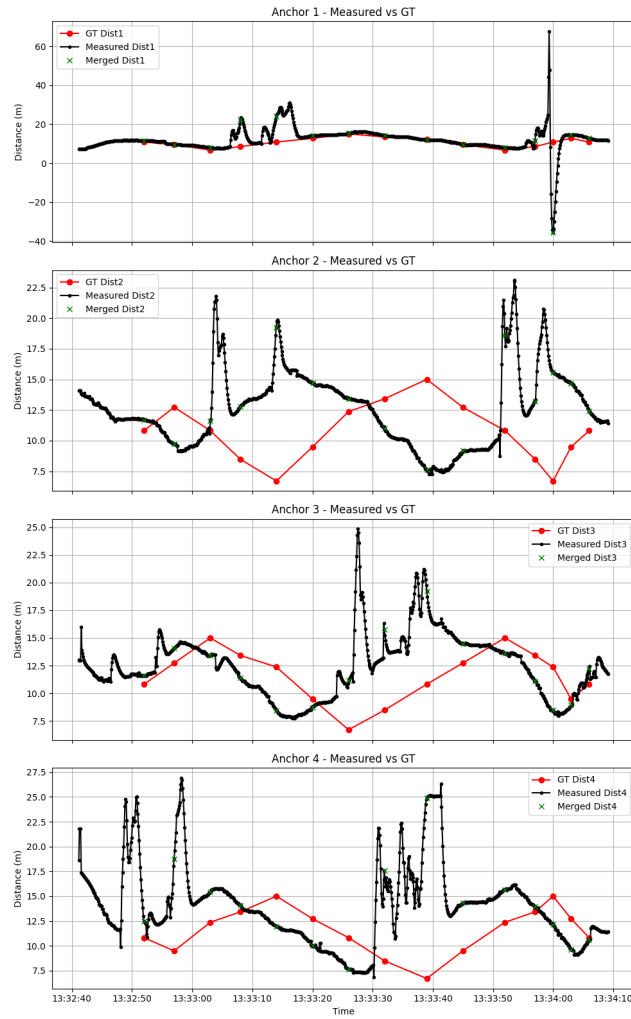Anchor 4: MAE=4.382 m, RMSE=6.276 m

Figure 7: Outlier Removal1 Measured vs GT Distance

8   Kalman Filter2 - Ground Truth

Anchor 1: MAE=5.809 m, RMSE=13.037 m
Anchor 2: MAE=4.607 m, RMSE=5.643 m
Anchor 3: MAE=2.807 m, RMSE=3.661 m
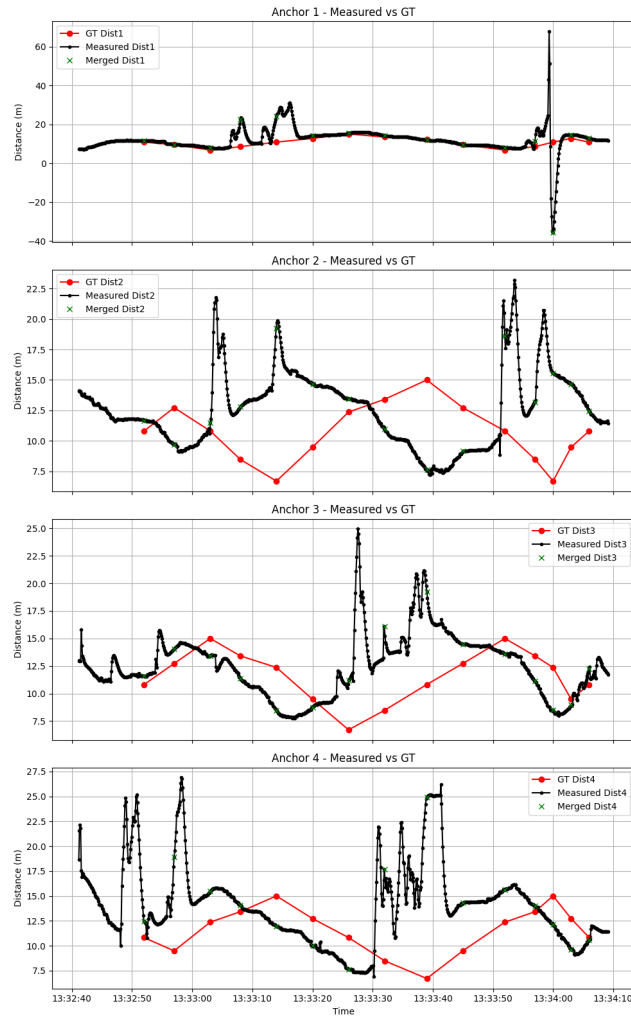Anchor 4: MAE=4.399 m, RMSE=6.304 m

Figure 8: Kalman Filter2 Measured vs GT Distance

9   EMA3 - Ground Truth

Anchor 1: MAE=1.886 m, RMSE=2.509 m
Anchor 2: MAE=4.189 m, RMSE=5.009 m
Anchor 3: MAE=2.313 m, RMSE=3.097 m
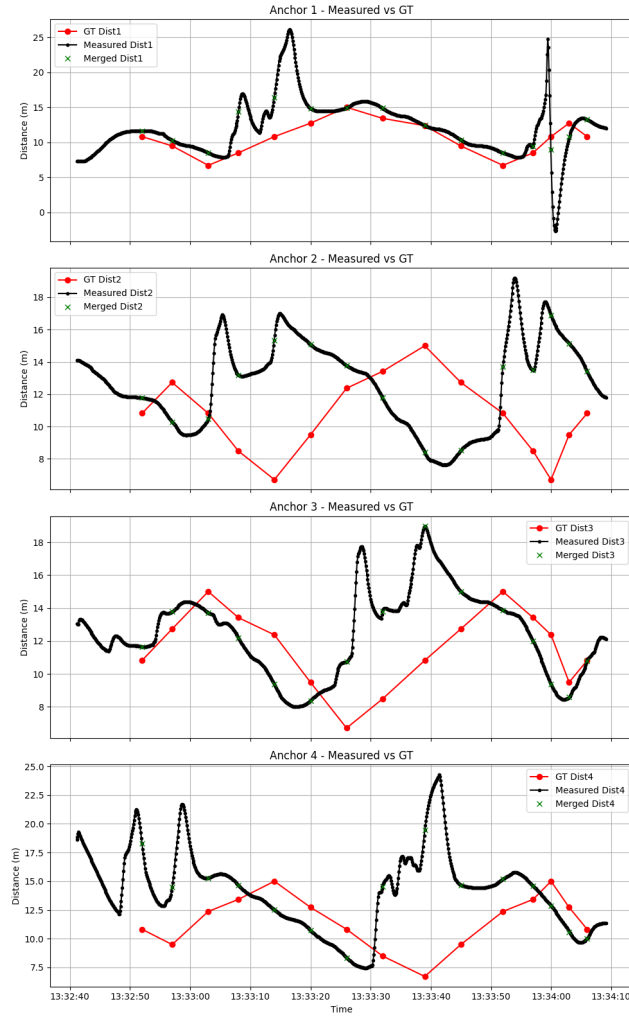Anchor 4: MAE=3.777 m, RMSE=4.844 m

Figure 9: EMA3 Measured vs GT Distance

10   Distance Correction4 - Ground Truth

Anchor 1: MAE=1.886 m, RMSE=2.509 m
Anchor 2: MAE=4.189 m, RMSE=5.009 m
Anchor 3: MAE=2.313 m, RMSE=3.097 m
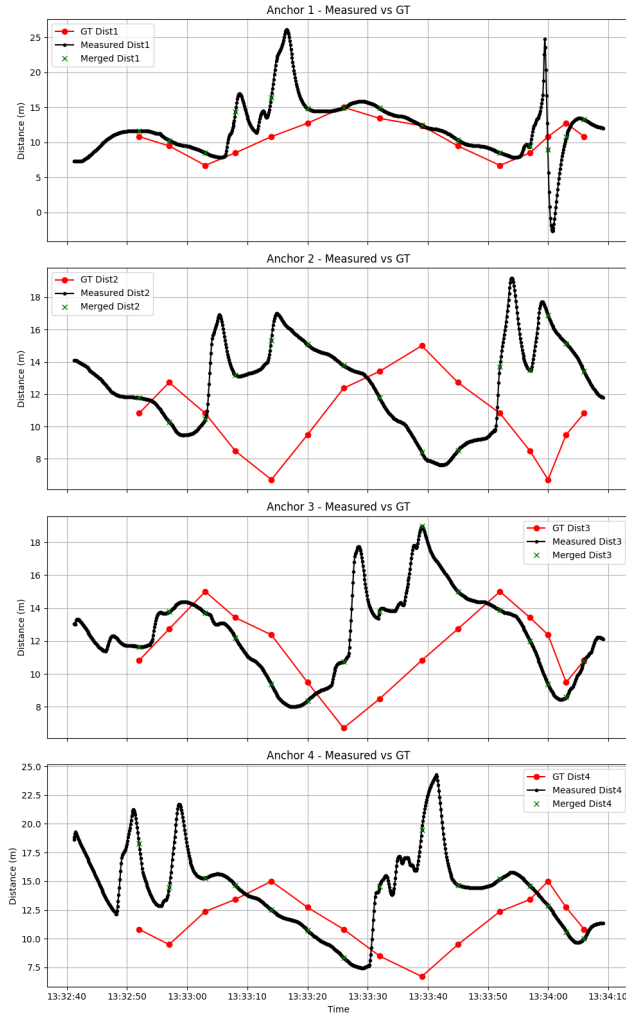Anchor 4: MAE=3.777 m, RMSE=4.844 m

Figure 10: Distance Correction4 Measured vs GT Distance
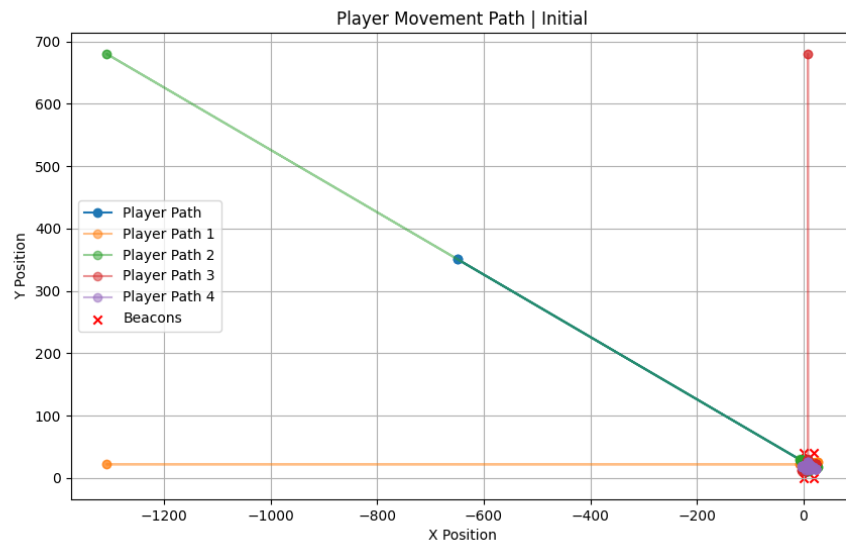
11 Initial
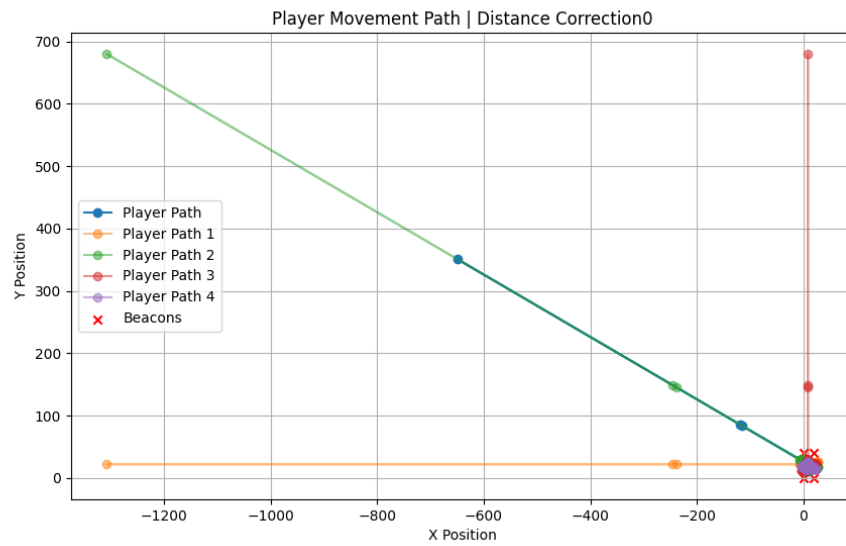

Figure 11: Player Movement Path

12 Distance Correction0
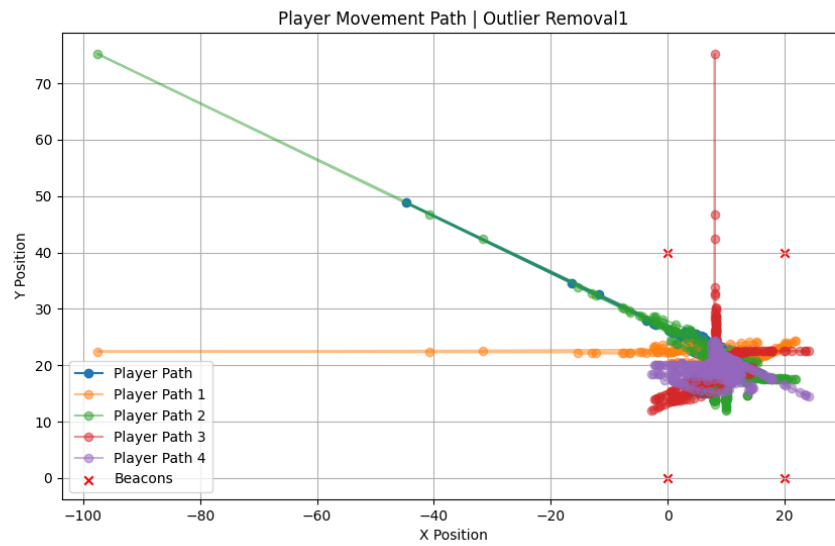

Figure 12: Player Movement Path

13 Outlier Removal1

Figure 13: Player Movement Path

14   Kalman Filter2

Figure 14: Player Movement Path

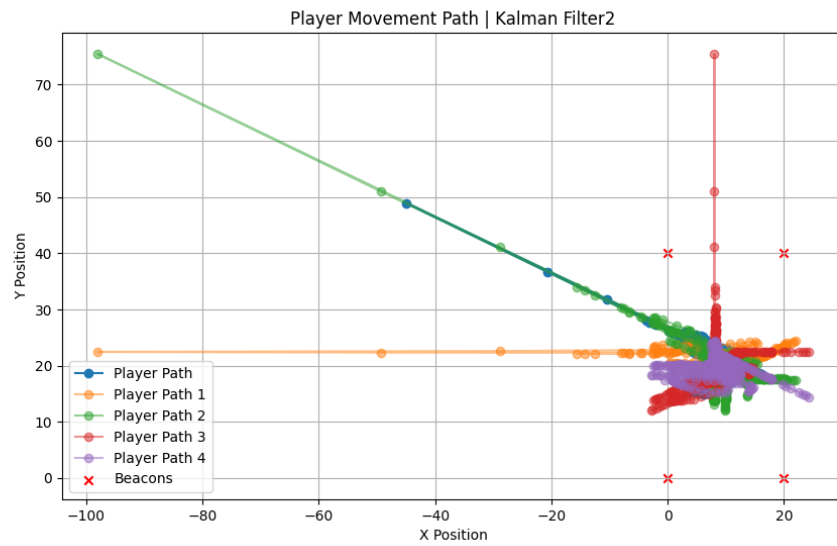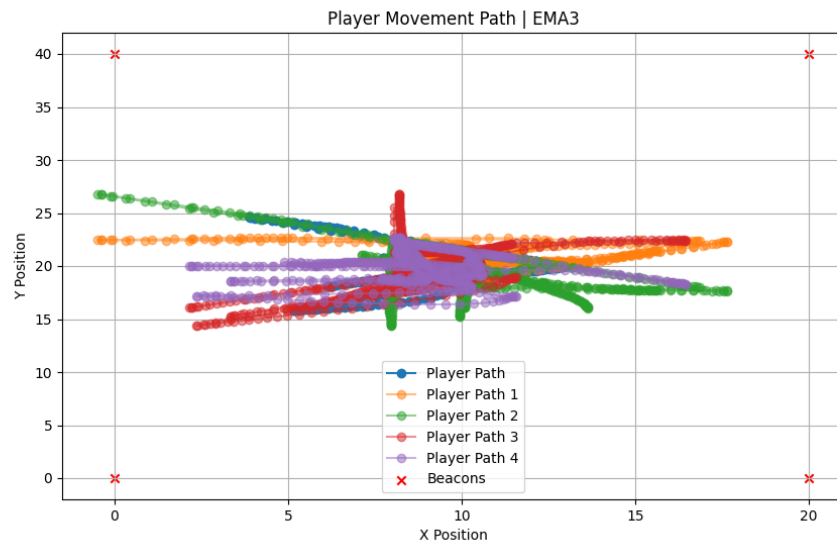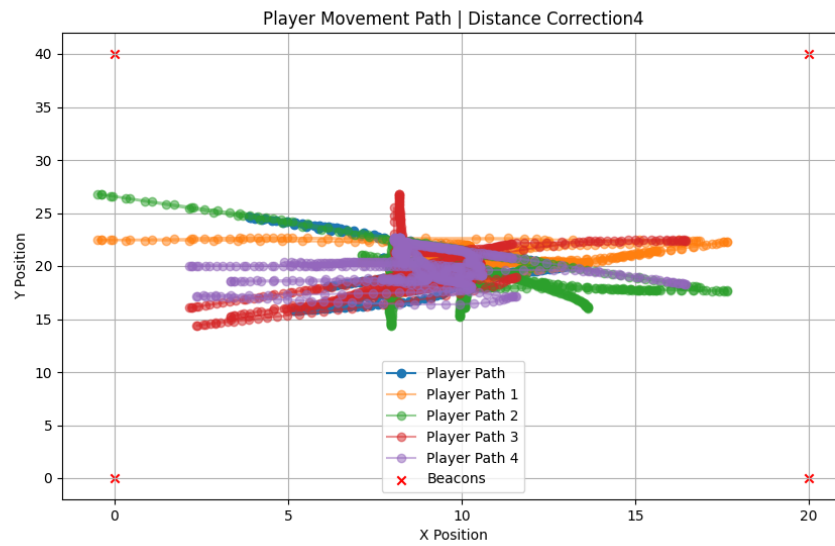# 15 EMA3

Figure 15: Player Movement Path

16 Distance Correction4

Figure 16: Player Movement Path