Bluetooth Tracking Report

OverTheHeadTest.csv

February 18, 2025

1   1D b1d_distance
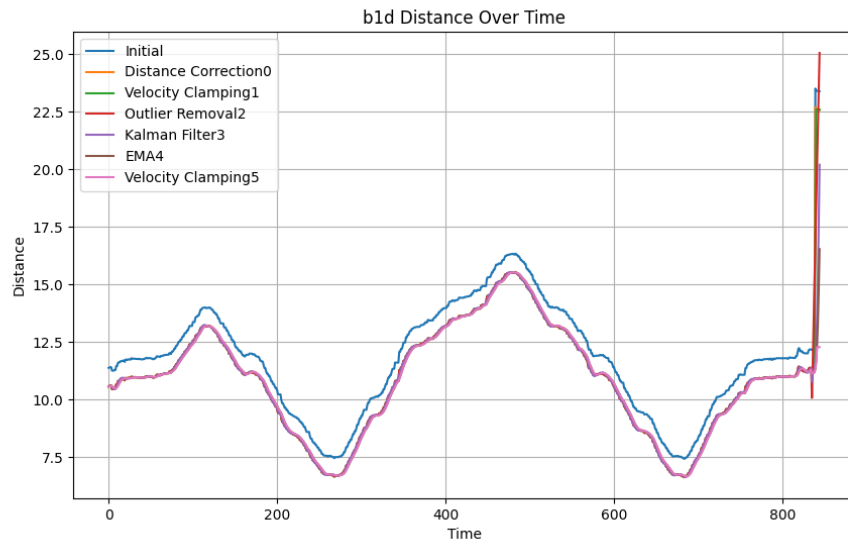

Figure 1: b1d Distance Over Time

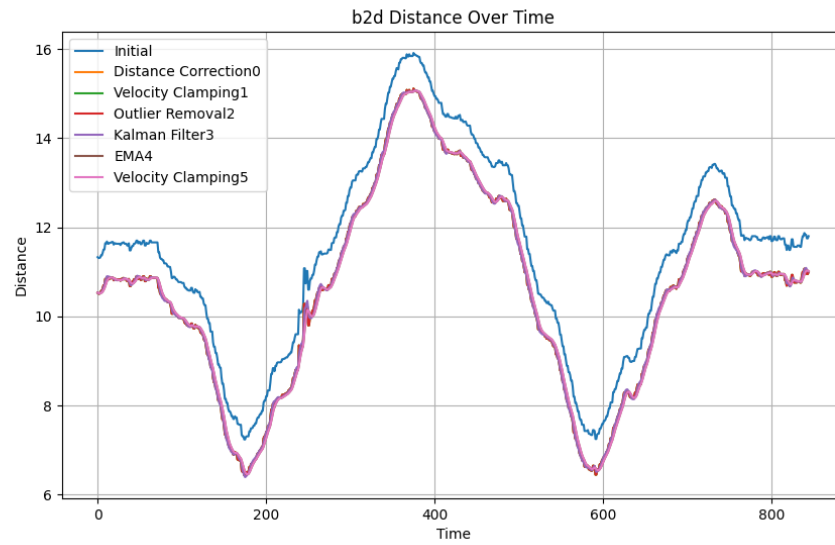# 2 1D b2d_distance

Figure 2: b2d Distance Over Time
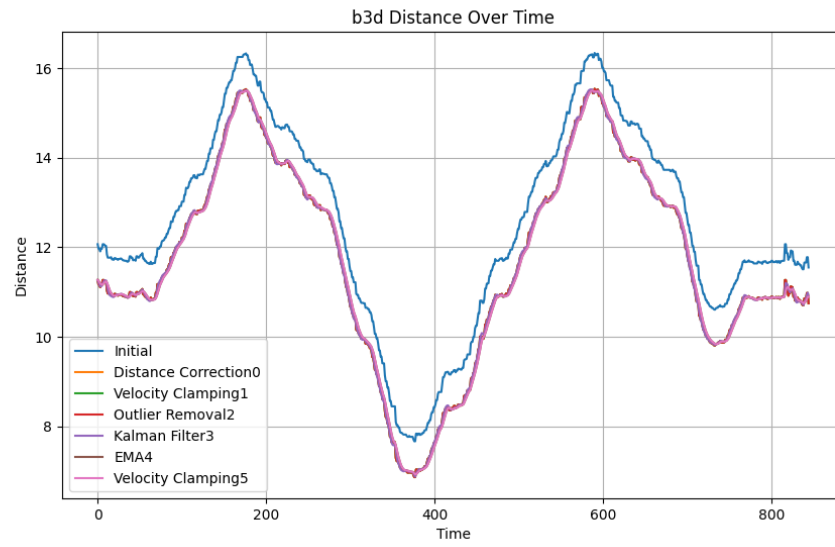
3   1D b3d_distance

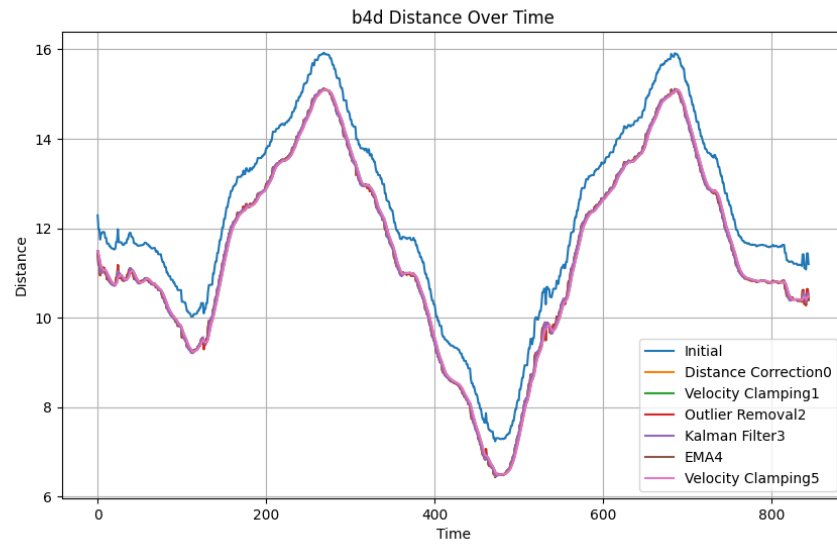Figure 3: b3d Distance Over Time

4 1D b4d_distance

Figure 4: b4d Distance Over Time

5 Initial - Ground Truth

Anchor 1: MAE=0.923 m, RMSE=0.960 m
Anchor 2: MAE=0.727 m, RMSE=0.772 m
Anchor 3: MAE=1.081 m, RMSE=1.121 m
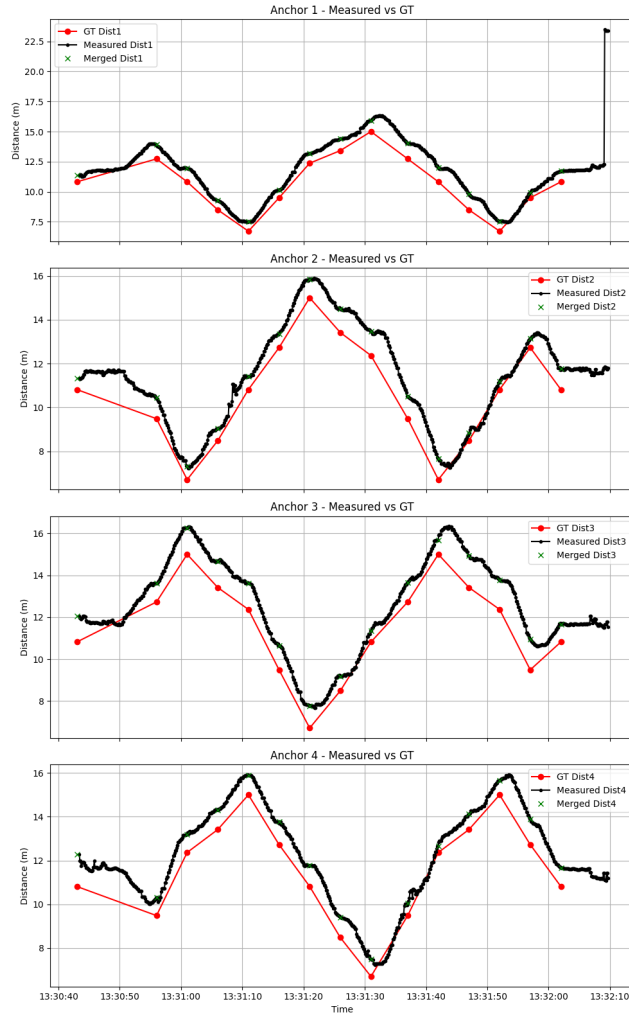Anchor 4: MAE=0.860 m, RMSE=0.899 m

Figure 5: Initial Measured vs GT Distance

6 Distance Correction0 - Ground Truth

Anchor 1: MAE=0.230 m, RMSE=0.292 m
Anchor 2: MAE=0.244 m, RMSE=0.268 m
Anchor 3: MAE=0.349 m, RMSE=0.408 m
Anchor 4: MAE=0.194 m, RMSE=0.268 m

Figure 6: Distance Correction0 Measured vs GT Distance

7   Velocity Clamping1 - Ground Truth

Anchor 1: MAE=0.230 m, RMSE=0.292 m
Anchor 2: MAE=0.244 m, RMSE=0.268 m
Anchor 3: MAE=0.349 m, RMSE=0.408 m
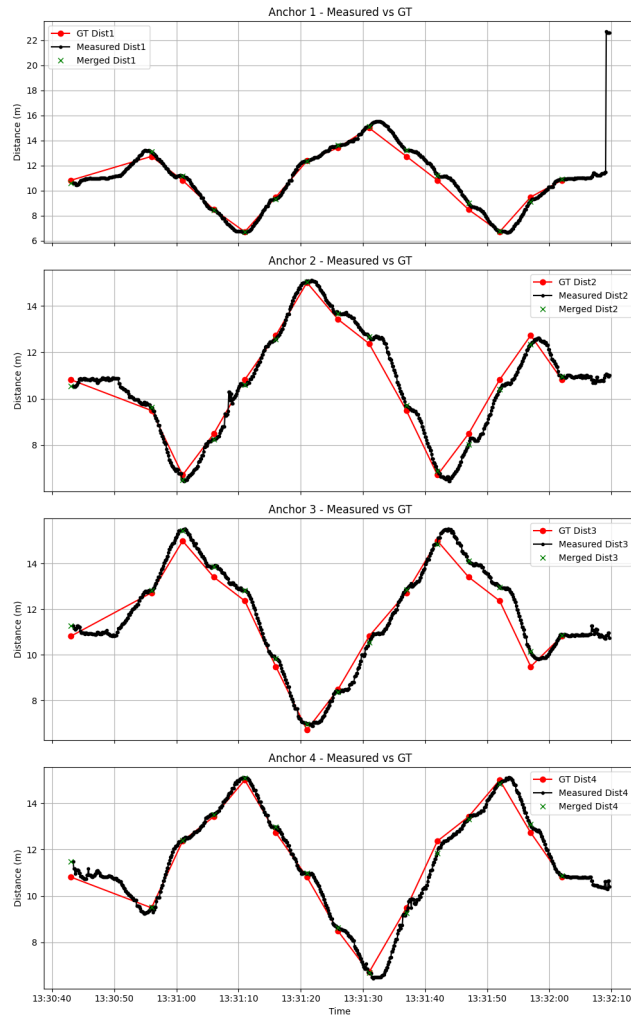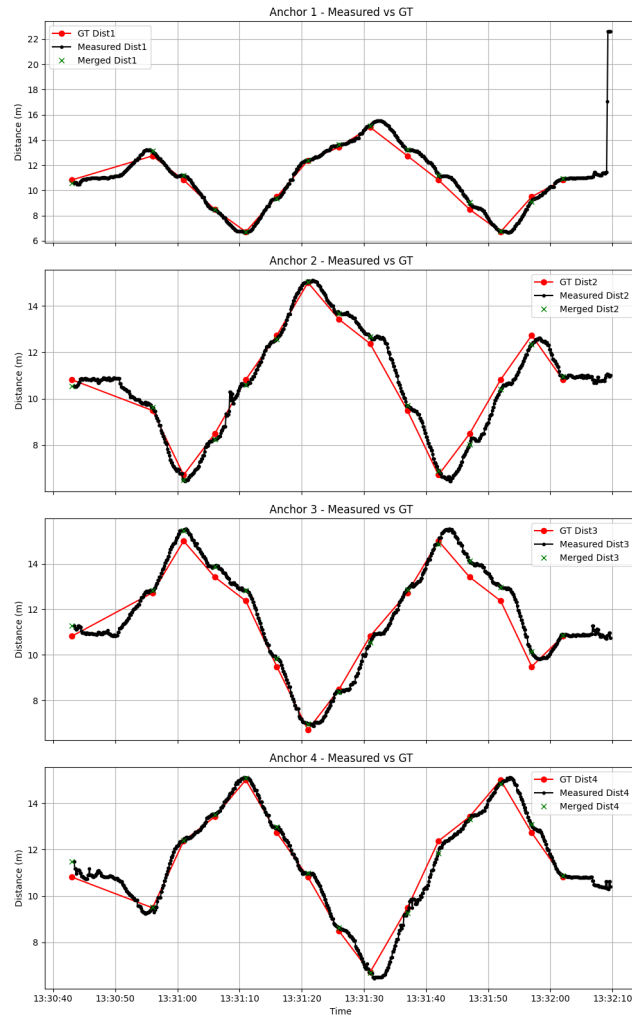Anchor 4: MAE=0.194 m, RMSE=0.268 m

Figure 7: Velocity Clamping1 Measured vs GT Distance

8 Outlier Removal2 - Ground Truth

Anchor 1: MAE=0.230 m, RMSE=0.292 m
Anchor 2: MAE=0.244 m, RMSE=0.268 m
Anchor 3: MAE=0.349 m, RMSE=0.408 m
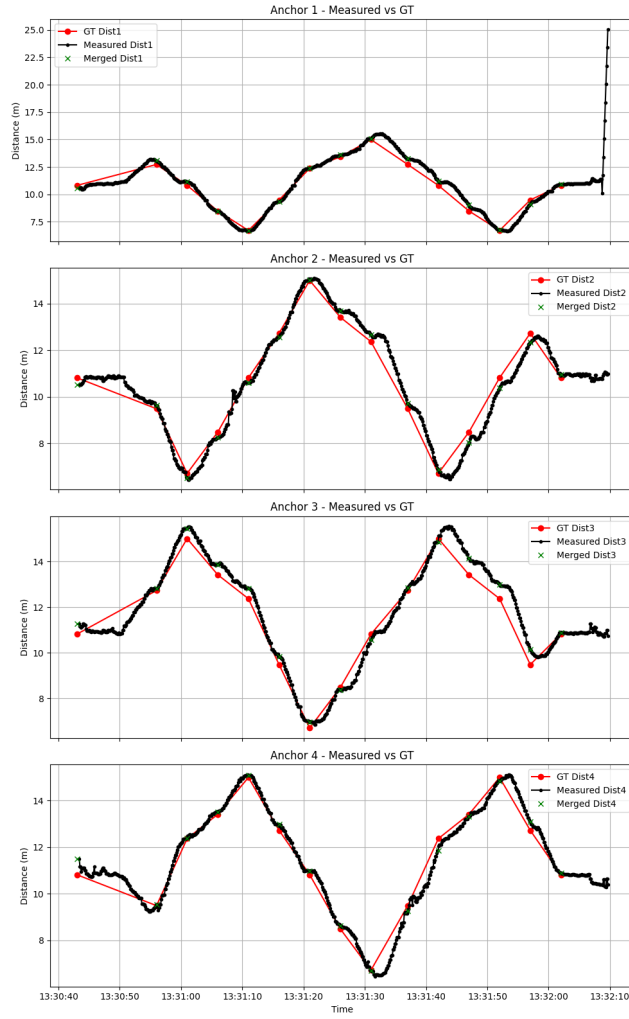Anchor 4: MAE=0.194 m, RMSE=0.268 m

Figure 8: Outlier Removal2 Measured vs GT Distance

9 Kalman Filter3 - Ground Truth

Anchor 1: MAE=0.224 m, RMSE=0.286 m
Anchor 2: MAE=0.241 m, RMSE=0.268 m
Anchor 3: MAE=0.354 m, RMSE=0.415 m
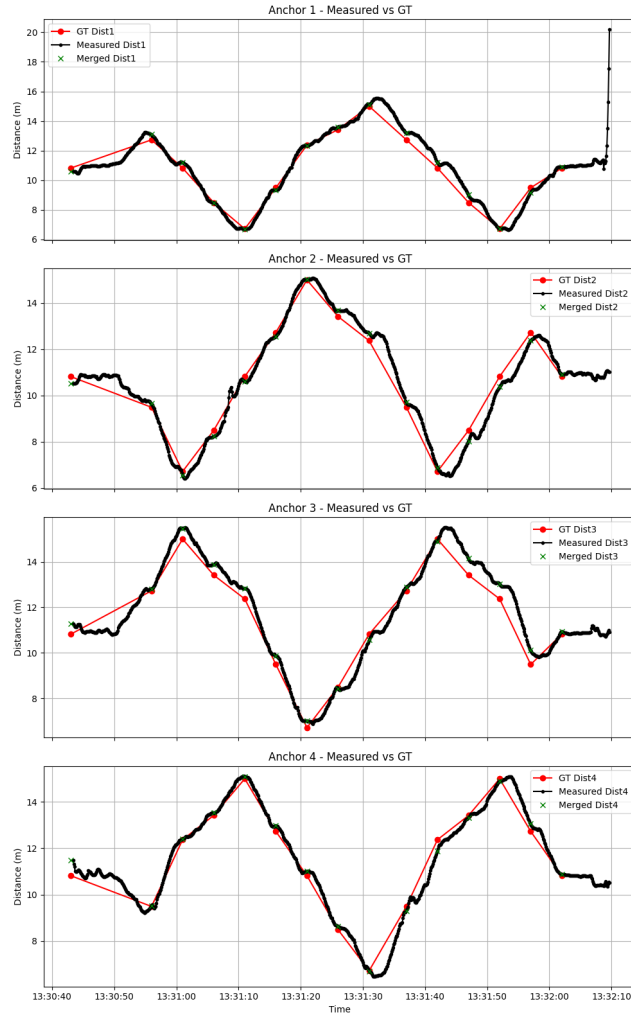Anchor 4: MAE=0.188 m, RMSE=0.260 m

Figure 9: Kalman Filter3 Measured vs GT Distance

10 EMA4 - Ground Truth

Anchor 1: MAE=0.267 m, RMSE=0.349 m
Anchor 2: MAE=0.286 m, RMSE=0.327 m
Anchor 3: MAE=0.377 m, RMSE=0.454 m
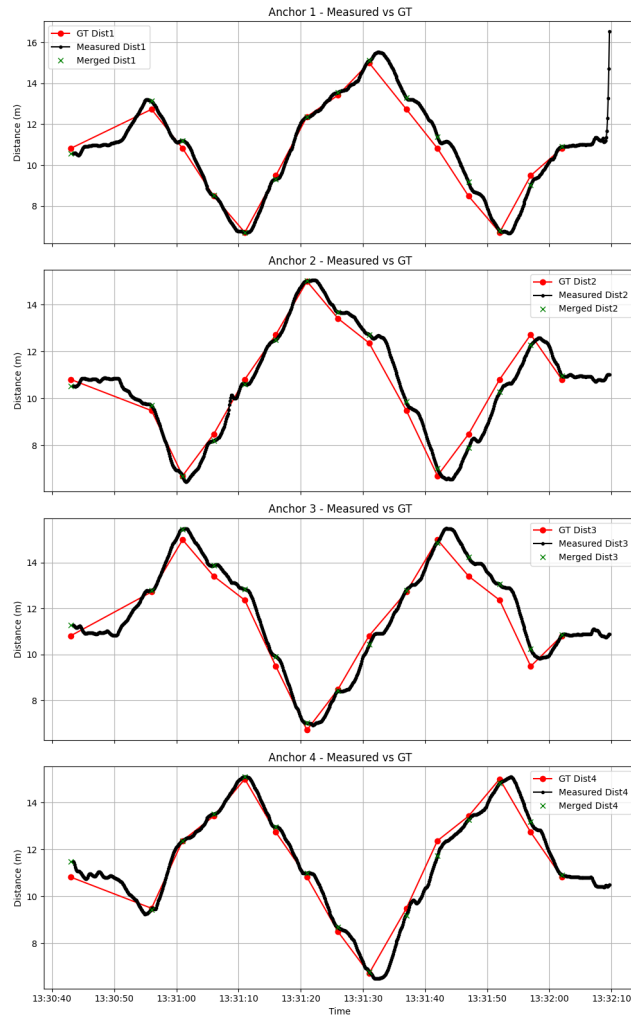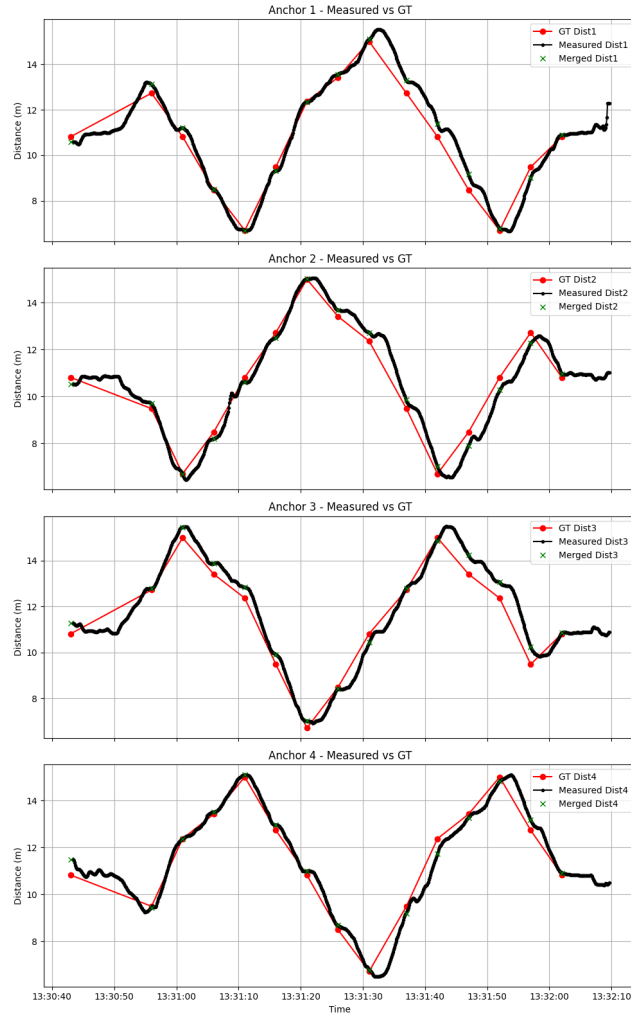Anchor 4: MAE=0.228 m, RMSE=0.302 m

Figure 10: EMA4 Measured vs GT Distance

11   Velocity Clamping5 - Ground Truth

Anchor 1: MAE=0.267 m, RMSE=0.349 m
Anchor 2: MAE=0.286 m, RMSE=0.327 m
Anchor 3: MAE=0.377 m, RMSE=0.454 m
Anchor 4: MAE=0.228 m, RMSE=0.302 m

Figure 11: Velocity Clamping5 Measured vs GT Distance
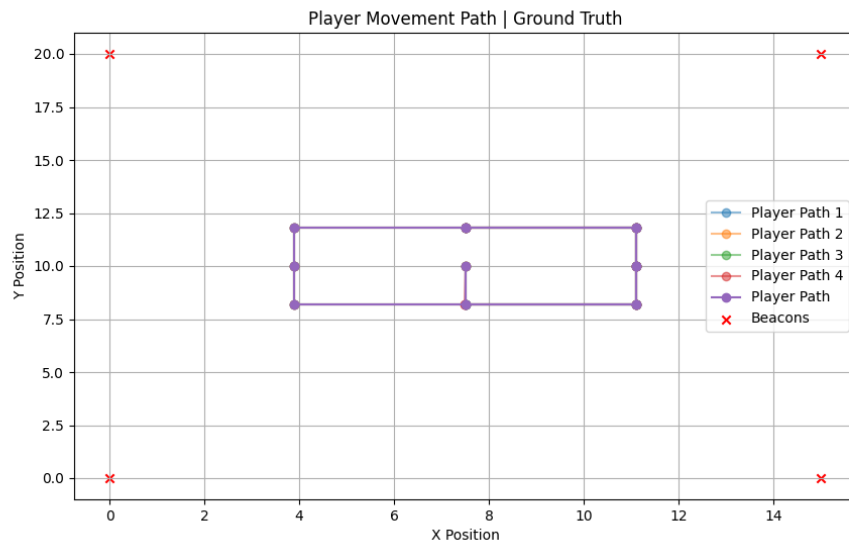
12   Ground Truth

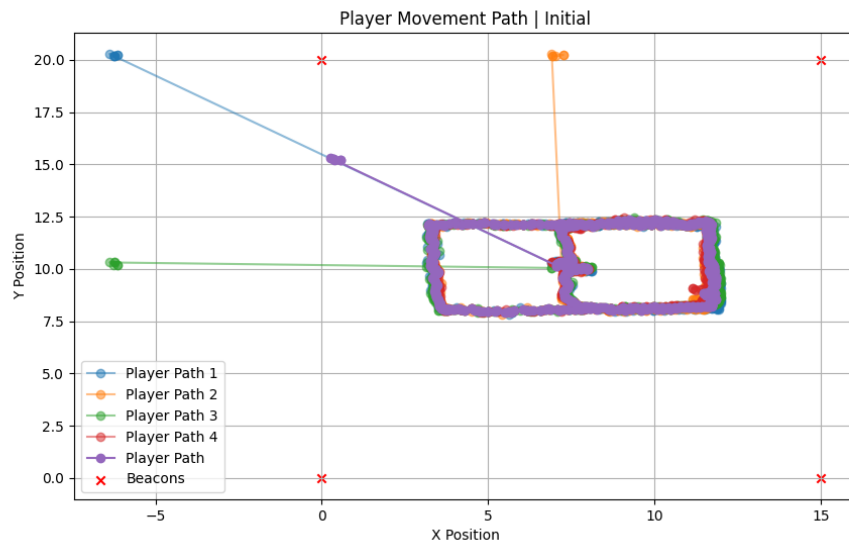Figure 12: Ground Truth Player Movement Path

13 Initial

Figure 13: Player Movement Path
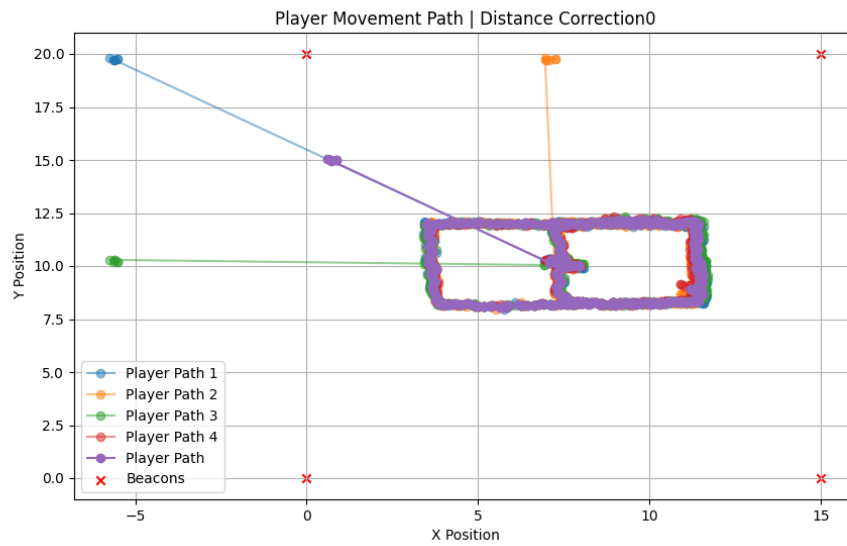
14 Distance Correction0

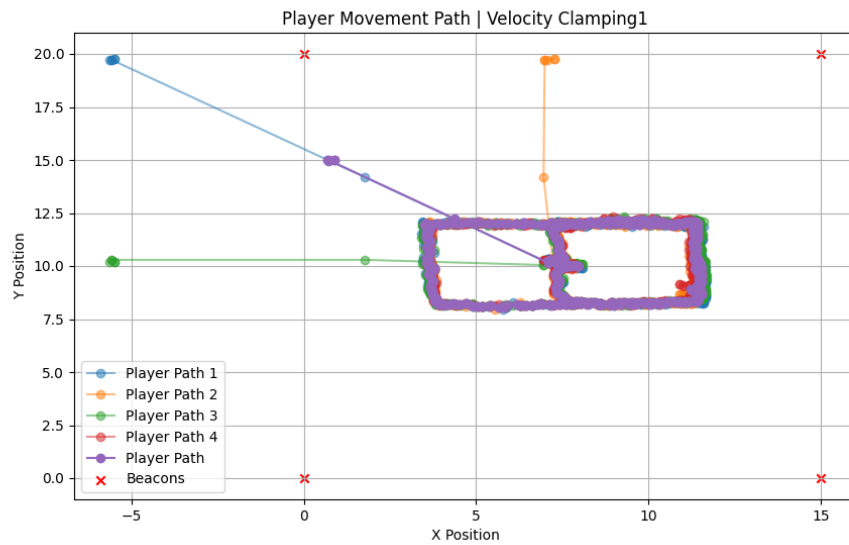Figure 14: Player Movement Path

15 Velocity Clamping1

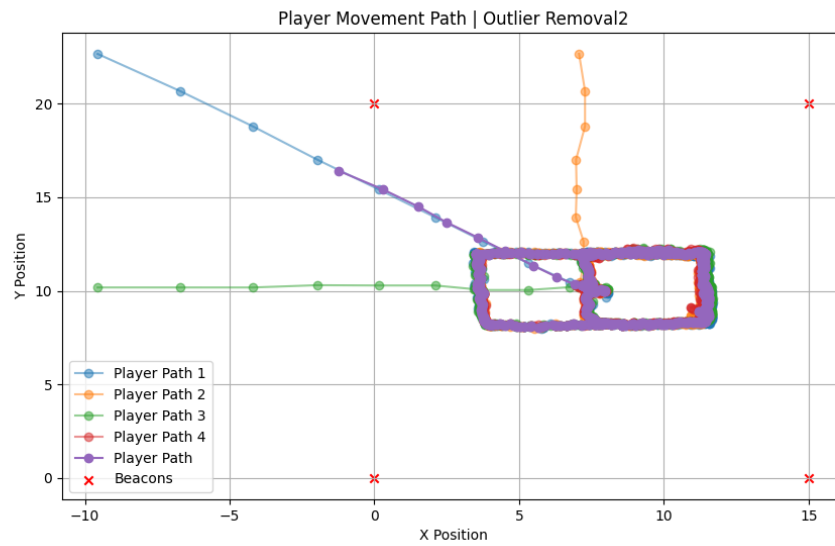Figure 15: Player Movement Path

16 Outlier Removal2

Figure 16: Player Movement Path
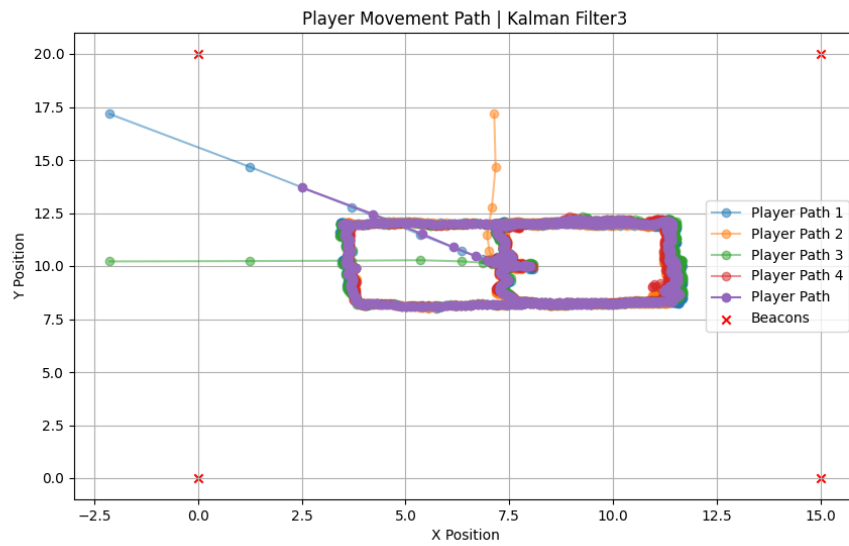
17 Kalman Filter3

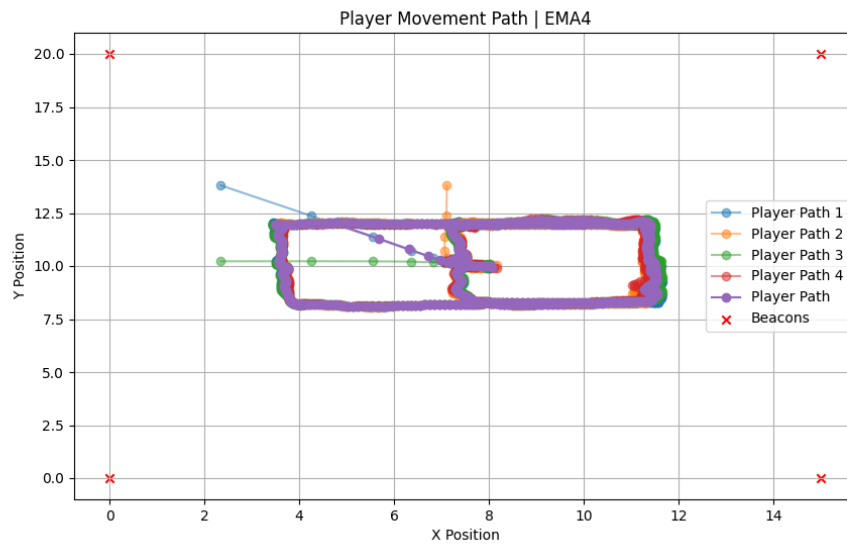Figure 17: Player Movement Path
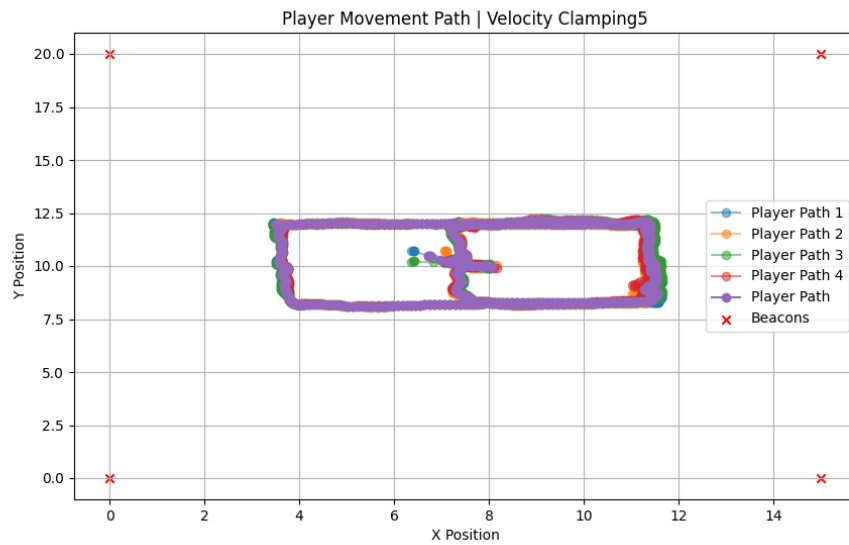
18 EMA4

Figure 18: Player Movement Path

19 Velocity Clamping5

Figure 19: Player Movement Path