Bluetooth Tracking Report

feb9/2-9-test3-ftm.csv

February 19, 2025

1 1D b1d_distance
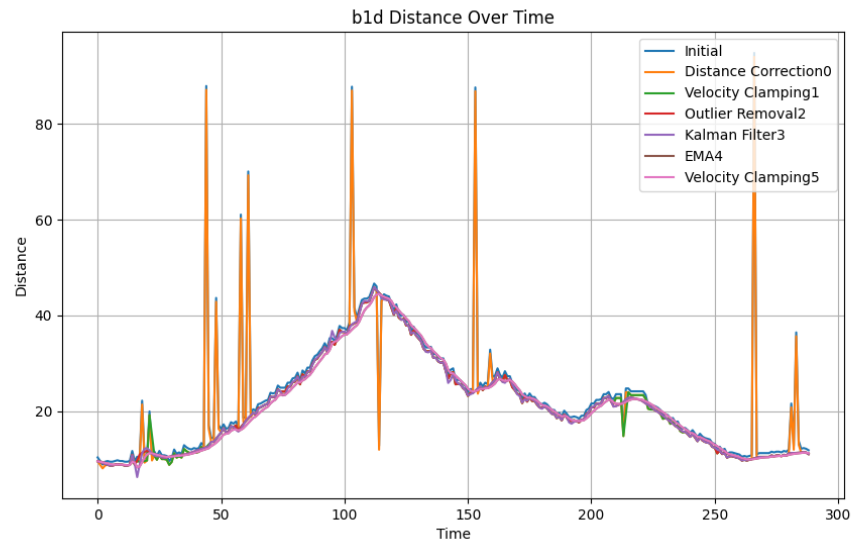

Figure 1: b1d Distance Over Time

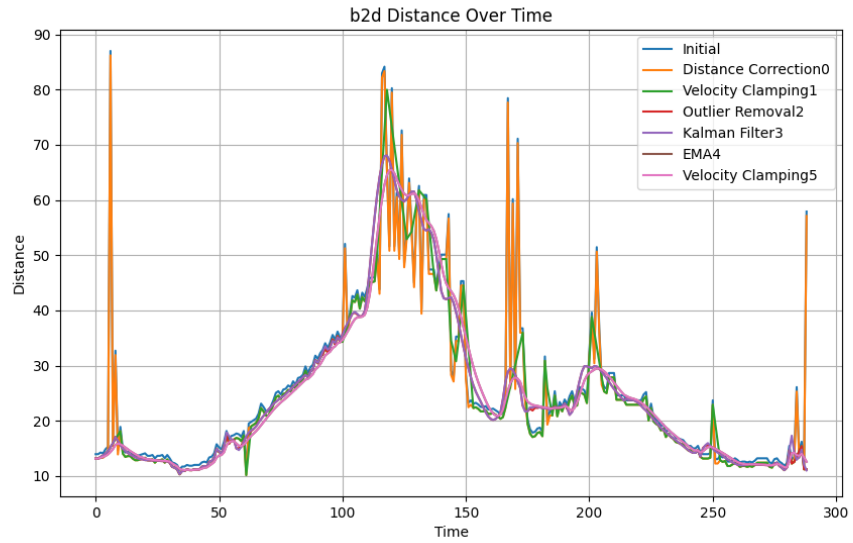# 2 1D b2d_distance

Figure 2: b2d Distance Over Time
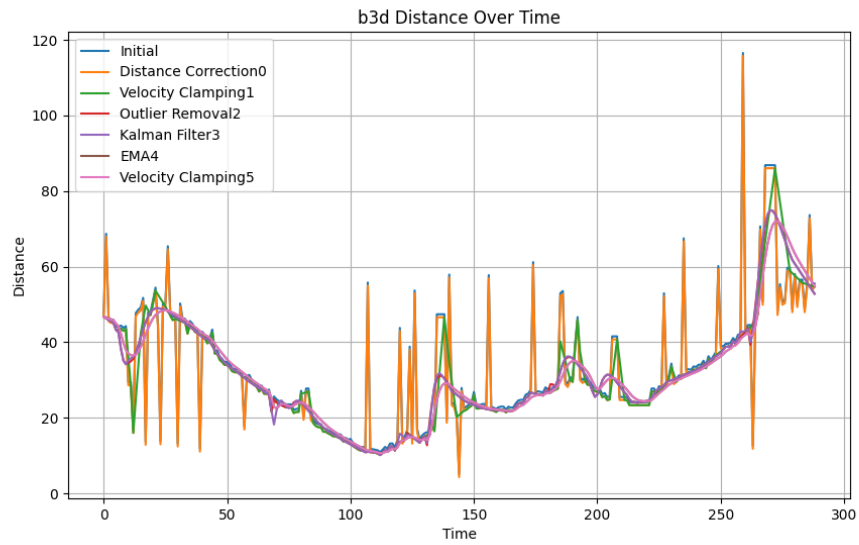
3   1D b3d_distance

Figure 3: b3d Distance Over Time
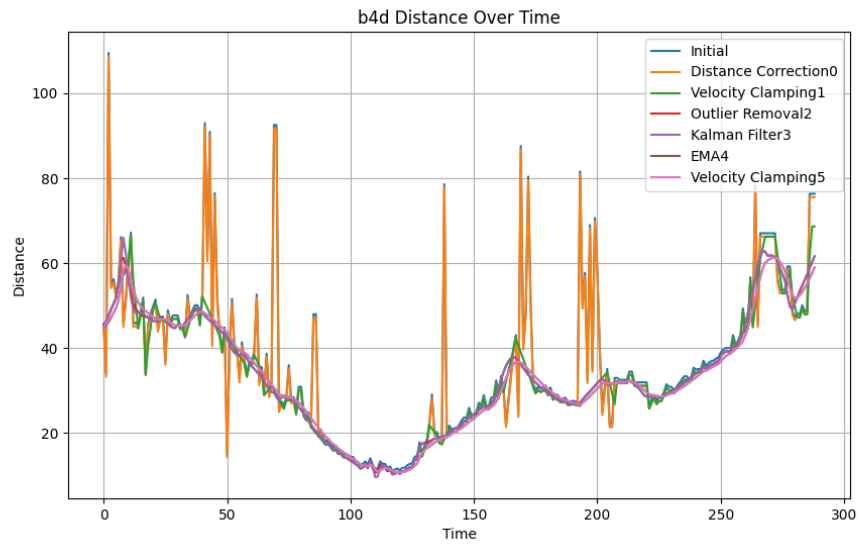
4   1D b4d_distance

Figure 4: b4d Distance Over Time

5 Initial - Ground Truth

Anchor 1: MAE=5.807 m, RMSE=16.228 m
Anchor 2: MAE=7.066 m, RMSE=11.568 m
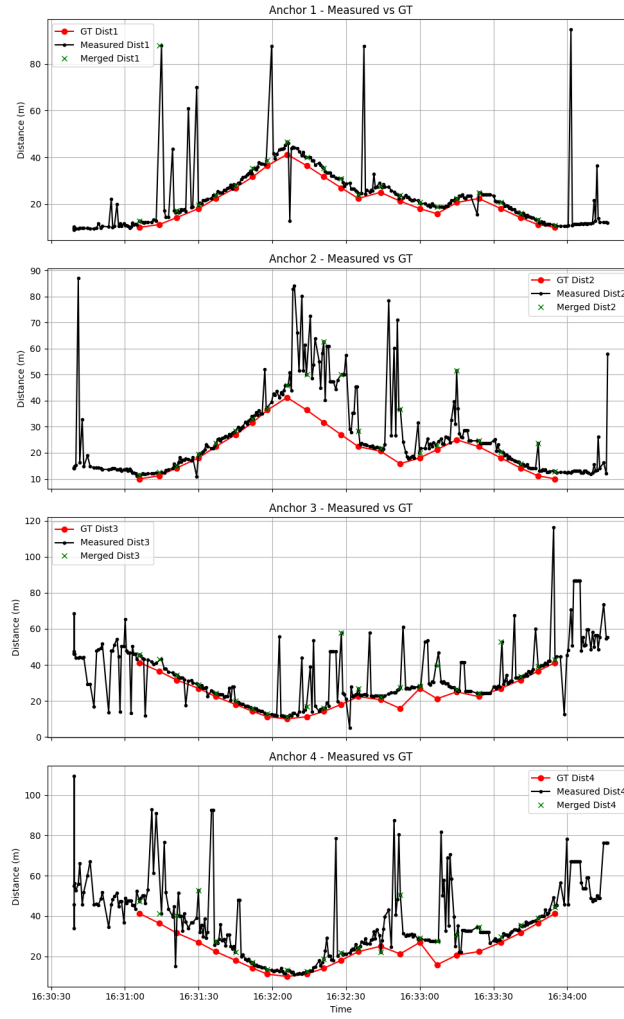Anchor 3: MAE=6.293 m, RMSE=11.253 m
Anchor 4: MAE=6.745 m, RMSE=9.788 m

Figure 5: Initial Measured vs GT Distance

6 Distance Correction0 - Ground Truth

Anchor 1: MAE=5.007 m, RMSE=15.960 m
Anchor 2: MAE=6.287 m, RMSE=11.097 m
Anchor 3: MAE=5.493 m, RMSE=10.826 m
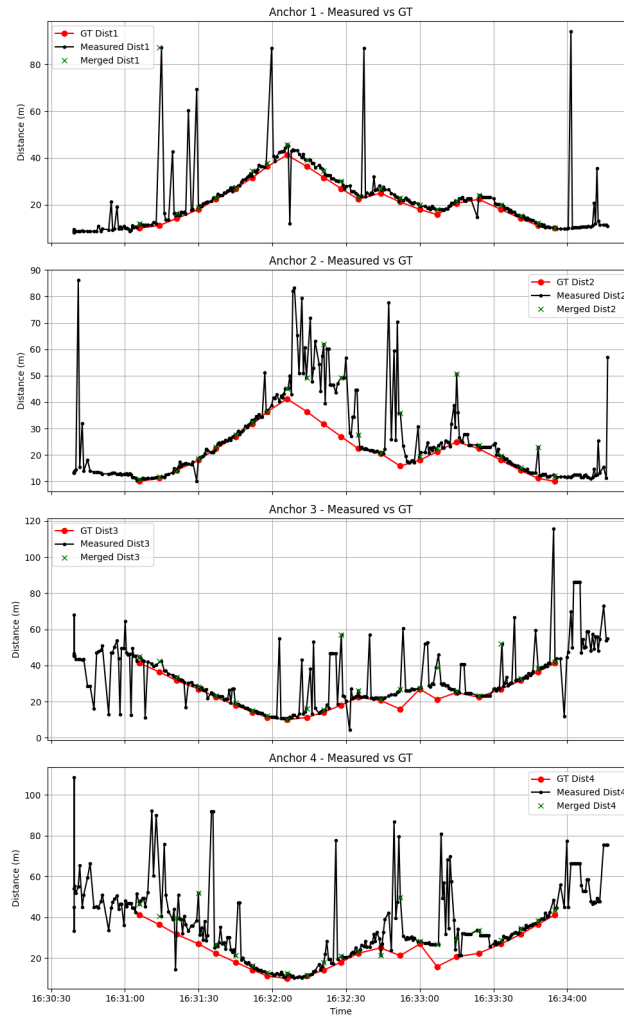Anchor 4: MAE=6.015 m, RMSE=9.275 m

Figure 6: Distance Correction0 Measured vs GT Distance

7 Velocity Clamping1 - Ground Truth

Anchor 1: MAE=1.833 m, RMSE=2.115 m
Anchor 2: MAE=7.067 m, RMSE=11.627 m
Anchor 3: MAE=3.638 m, RMSE=6.016 m
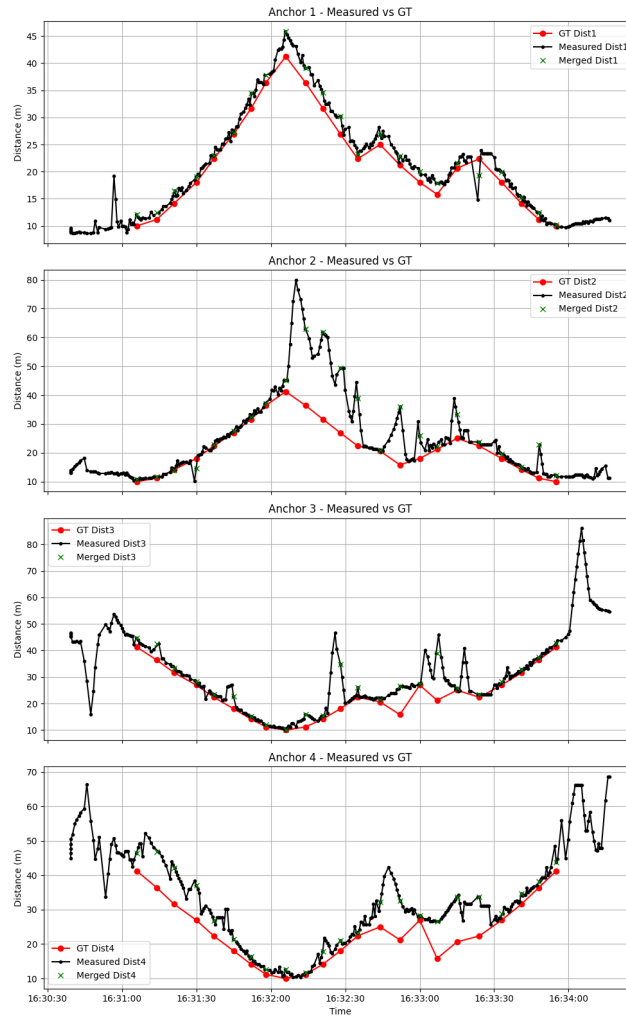Anchor 4: MAE=5.341 m, RMSE=6.720 m

Figure 7: Velocity Clamping1 Measured vs GT Distance

8 Outlier Removal2 - Ground Truth

Anchor 1: MAE=1.654 m, RMSE=1.980 m
Anchor 2: MAE=5.205 m, RMSE=9.048 m
Anchor 3: MAE=3.160 m, RMSE=4.786 m
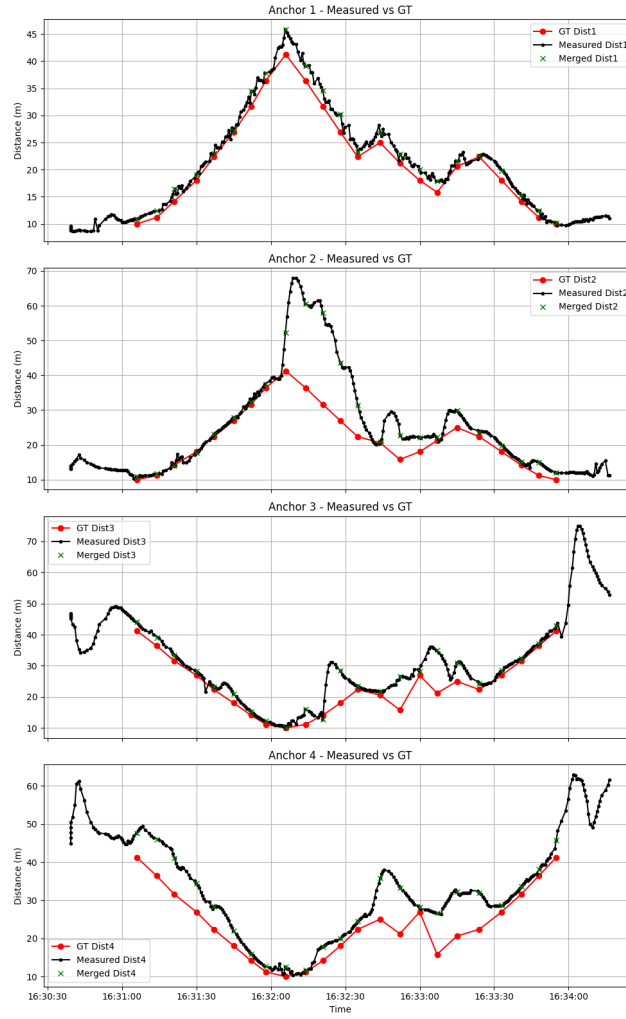Anchor 4: MAE=5.356 m, RMSE=6.604 m

Figure 8: Outlier Removal2 Measured vs GT Distance

9 Kalman Filter3 - Ground Truth

Anchor 1: MAE=1.619 m, RMSE=1.946 m
Anchor 2: MAE=5.222 m, RMSE=9.045 m
Anchor 3: MAE=3.156 m, RMSE=4.736 m
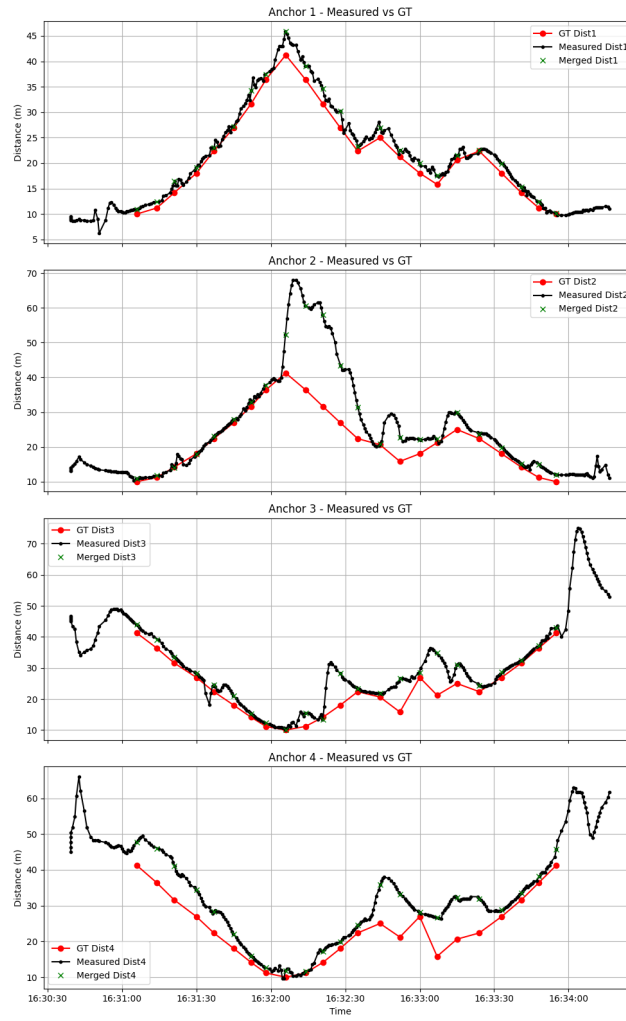Anchor 4: MAE=5.295 m, RMSE=6.579 m

Figure 9: Kalman Filter3 Measured vs GT Distance

10   EMA4 - Ground Truth

Anchor 1: MAE=1.633 m, RMSE=2.072 m
Anchor 2: MAE=5.714 m, RMSE=10.043 m
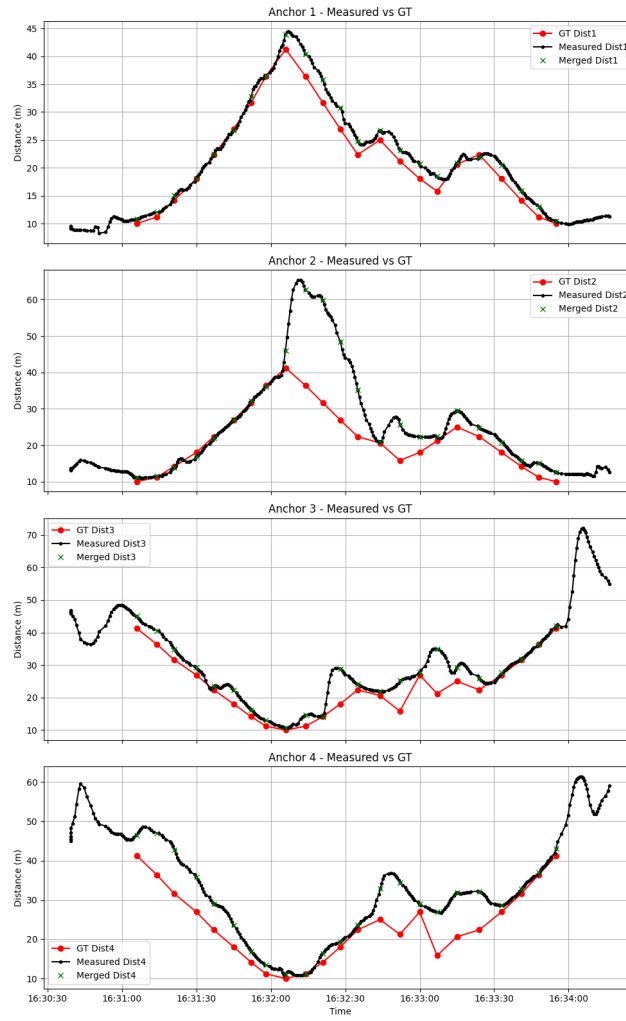Anchor 3: MAE=3.208 m, RMSE=4.739 m
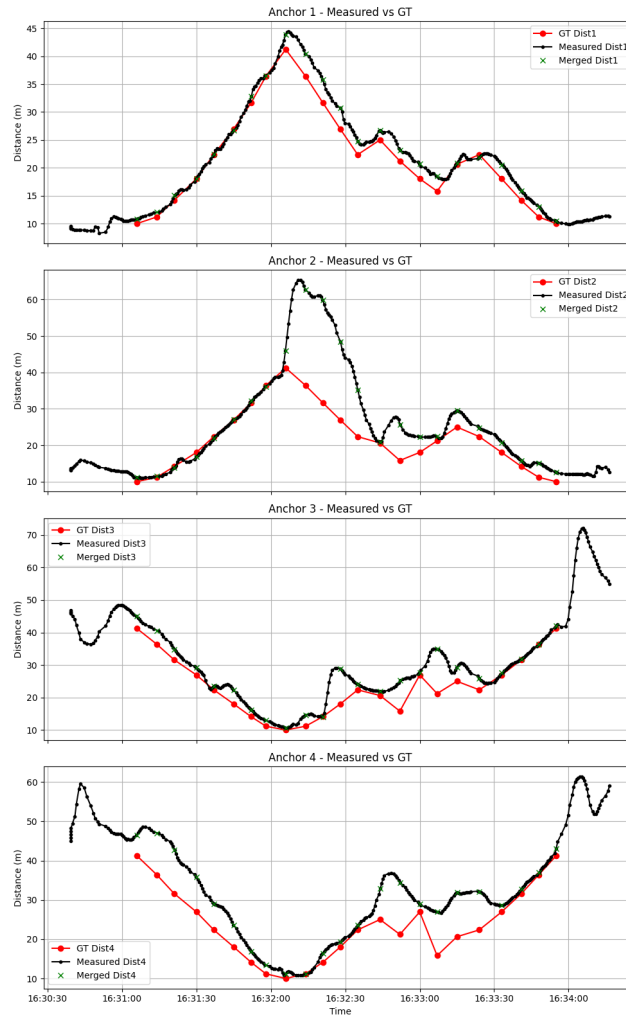Anchor 4: MAE=5.201 m, RMSE=6.703 m

Figure 10: EMA4 Measured vs GT Distance

11   Velocity Clamping5 - Ground Truth

Anchor 1: MAE=1.633 m, RMSE=2.072 m
Anchor 2: MAE=5.714 m, RMSE=10.043 m
Anchor 3: MAE=3.208 m, RMSE=4.739 m
Anchor 4: MAE=5.201 m, RMSE=6.703 m

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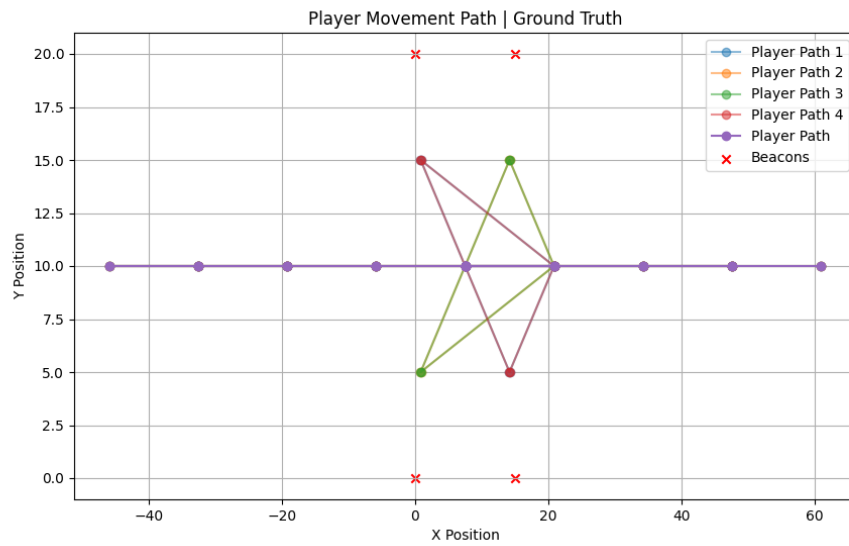
12 Ground Truth

Figure 12: Ground Truth Player Movement Path
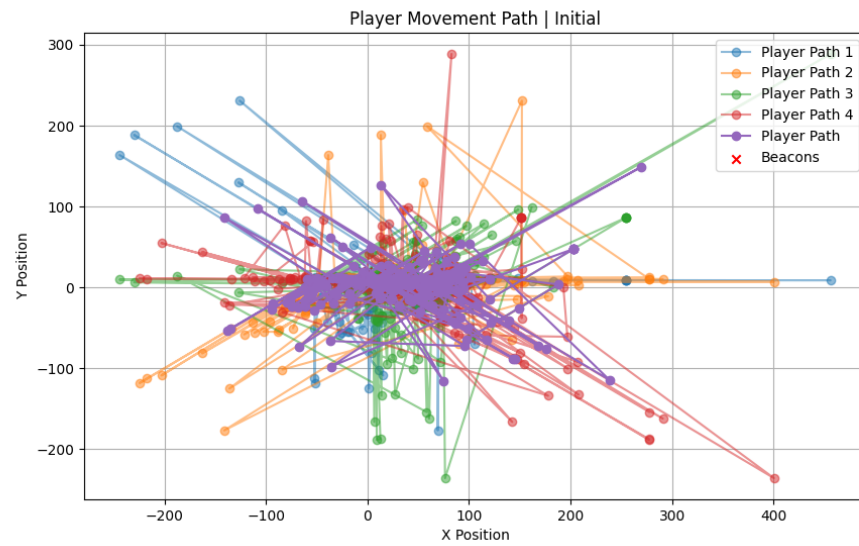
13 Initial

Figure 13: Player Movement Path
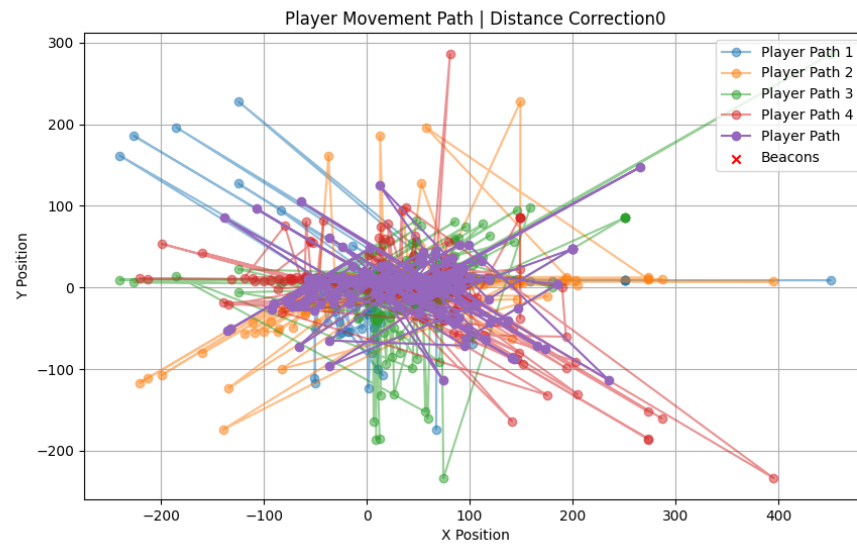
14 Distance Correction0

Figure 14: Player Movement Path
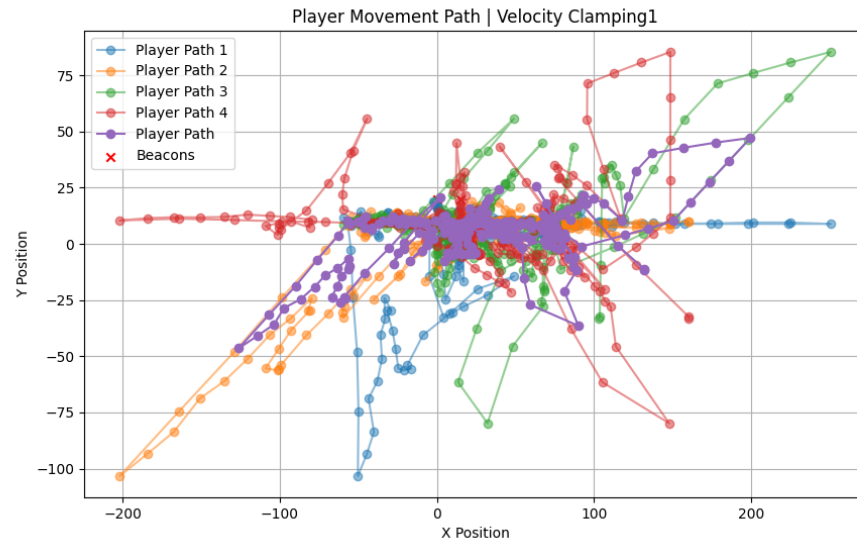
15   Velocity Clamping1

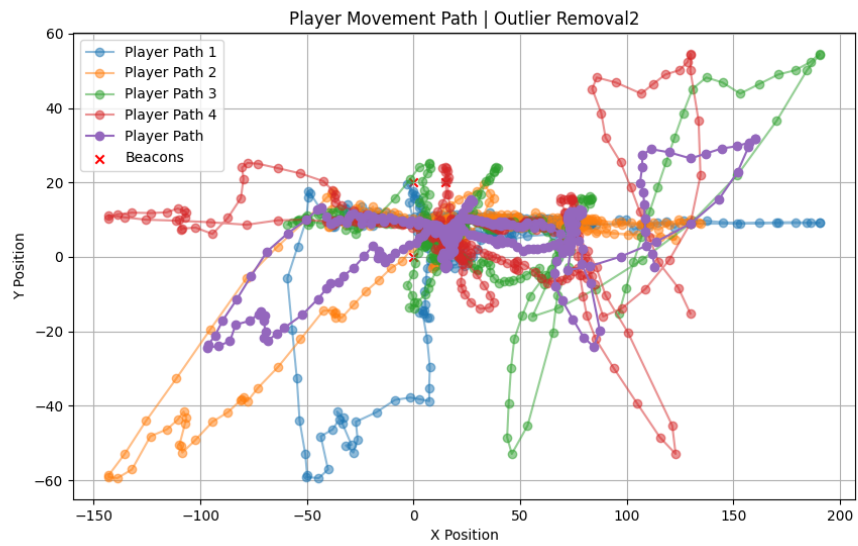Figure 15: Player Movement Path

16 Outlier Removal2

Figure 16: Player Movement Path
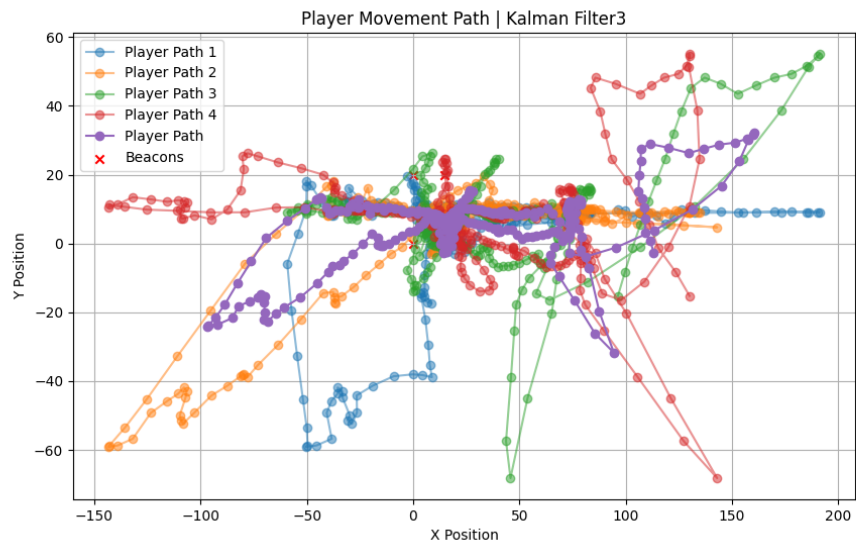
17 Kalman Filter3

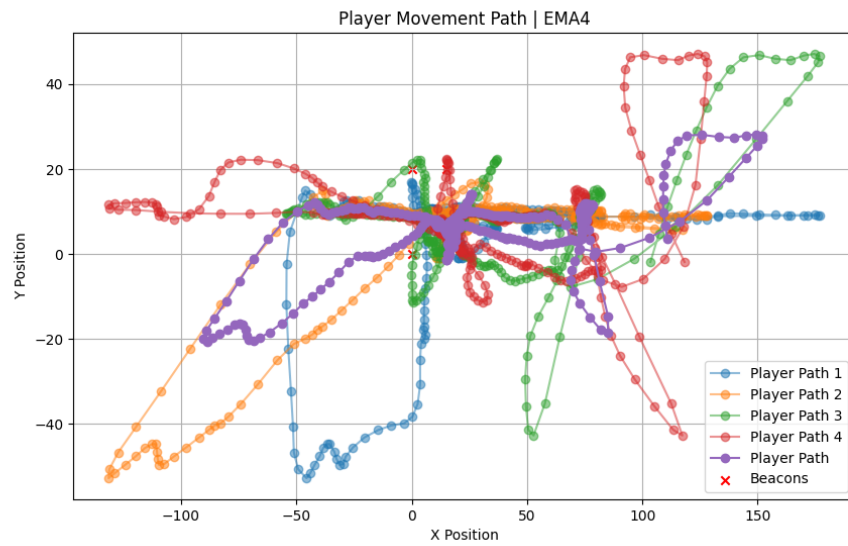Figure 17: Player Movement Path
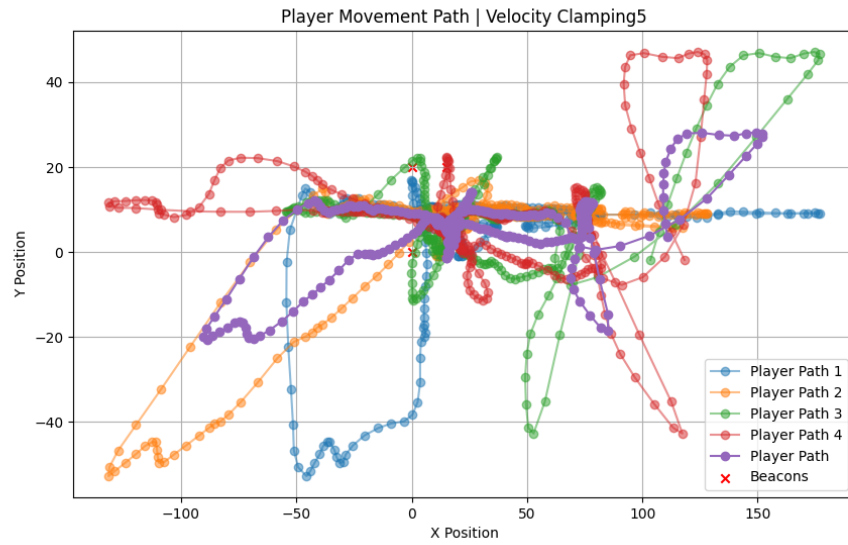
18 EMA4

Figure 18: Player Movement Path

19 Velocity Clamping5

Figure 19: Player Movement Path