

# Enhancing Motion Prediction by a Cooperative Framework

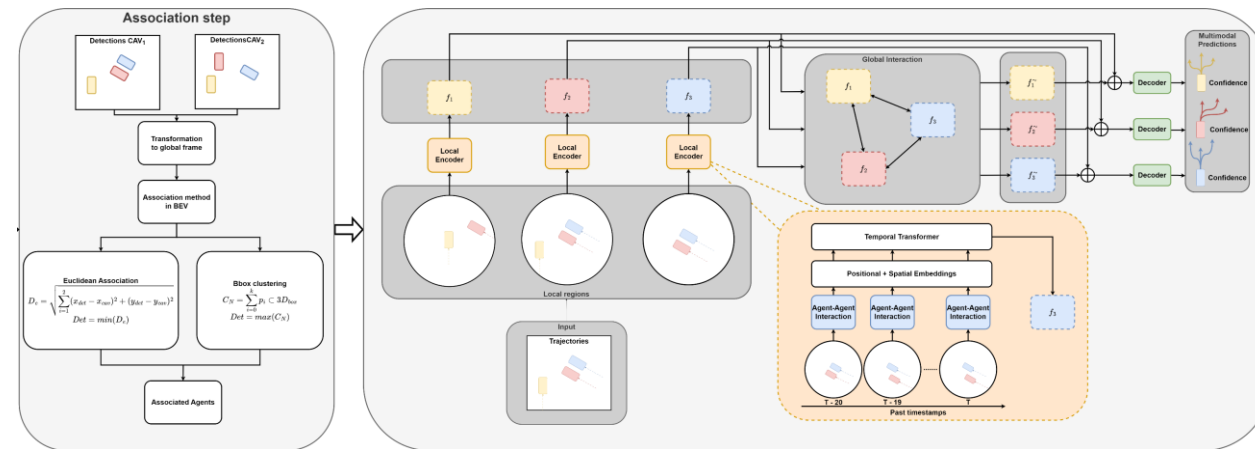
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## Contributions:

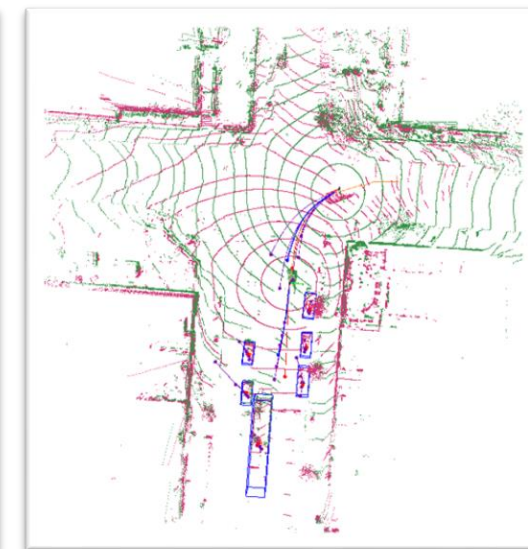
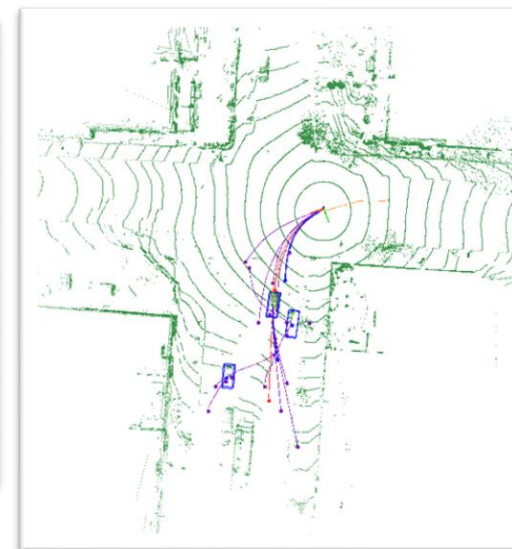
- HiVT [1] map-less trained in Argoverse [2]
- Two association methods for a V2V framework
- V2V4Real [3] evaluation in Motion Prediction

## Future works:

- Evaluate other V2X datasets
- Simulation environment



CAVs	Fusion	ViewPoint	N actors	brier-minADE			brier-minFDE		
				Absolute	Relative actors	Improvement	Absolute	Relative actors	Improvement
Tesla	-	Tesla	7.74	1.80	0.23	-	2.88	0.37	-
Astuff	-	Astuff	8.45	1.88	0.22	-	2.96	0.35	-
Tesla & Astuff	-	Tesla	14.58	2.00	0.14	-	3.17	0.22	-
Tesla & Astuff	Euclidean	Tesla	10.13	1.92	0.19	18%	3.02	0.30	20%
Tesla & Astuff	Bbox clustering	Tesla	10.19	1.92	0.19	19%	3.03	0.30	20%
Tesla & Astuff	-	Astuff	14.58	2.00	0.14	-	3.18	0.22	-
Tesla & Astuff	Euclidean	Astuff	10.13	1.92	0.19	15%	3.04	0.30	14%
Tesla & Astuff	Bbox clustering	Astuff	10.19	1.93	0.19	15%	3.05	0.30	15%



[1]: Zhou, Z., Ye, L., Wang, J., Wu, K., & Lu, K. (2022). Hivt: Hierarchical vector transformer for multi-agent motion prediction. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition* (pp. 8823-8833).  
 [2]: Chang, M. F., Lambert, J., Sangkloy, P., Singh, J., Bak, S., Hartnett, A., ... & Hays, J. (2019). Argoverse: 3d tracking and forecasting with rich maps. In *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition* (pp. 8748-8757).  
 [3]: Xu, R., Xia, X., Li, J., Li, H., Zhang, S., Tu, Z., ... & Ma, J. (2023). V2v4real: A real-world large-scale dataset for vehicle-to-vehicle cooperative perception. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition* (pp. 13712-13722).

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Funded by the  
European Union

This project has received funding under grant agreement No 101069614. It is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Commission. Neither the European Union nor the granting authority can be held responsible for them.