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F O R S C H U N G S P R A X I S

for

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Object Prediction and Scenario Recognition for Highly Automated Vehicle

Problem description:

In the field of highly automated driving, enabling the driving assistant system to recognize the current driving situations as well as predict the behaviors of moving objects (such as humans and cars) is one of the fundamental topics [1, 2]. BMW ConnectedDrive Lab Shanghai is currently developing autonomous cars in metropolitan areas. The raw fused data for self-driving vehicles gathered from sensors and cameras are available. This Forschungspraxis aims to extract the information from these data sets to predict the object movements and recognize the scenarios while driving.

Work schedule:

- Understanding and classifying the raw fused data set.
- Developing a neural network to recognize different driving scenarios.
- Classifying and recognizing related objects.
- Developing (or testing) algorithms to predict the moving behaviors of an object.
- Testing results in the autonomous cars

Bibliography:

[1] Yufei Tao, C.Faloutsos, D.Papadias, Bin Liu. Prediction and Indexing of Moving Objects with Unknown Motion Patterns In *Proceedings of the ACM SIGMOD international conference on Management of data, 2004*

[2] J.Levinson et al. Towards Fully Autonomous Driving: Systems and Algorithms. Biped walking pattern generation by using preview control of zero-moment point In *Proceedings Intelligent Vehicles Symposium (IV), 2011.*

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