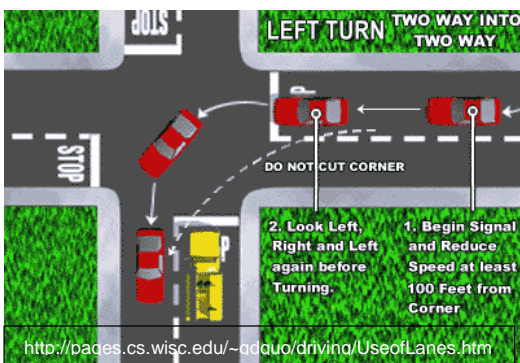# A Novel Prediction Model: towards an efficient route-planning for acquisition of representative scenarios

Simulation-based testing and validation of AD functions are getting more and more pronounced for automated vehicles to be safe and ready for series production. The test and validation process requires a huge amount of testing data/scenarios which are acquired/extracted from real traffic situations. To gather real traffic data, the test vehicles, equipped with different high-resolution sensors, shall drive on predefined routes at predefined time windows to capture as many effective scenarios as possible.

Definition of the acquisition routes, so far, relies fully on traffic statistics published by authorities, associations or simply google map live traffic data. Based on those online available statistic information, it is so far difficult to find out the optimum routes to maximize the frequency of occurrence of the required scenarios. This problem leads to a huge effort on acquisition of represenative scneario data, e.g. cut-in and cut-through.

To optimize the route planning process and further to increase the efficiency of scenario acquisition, the target of this master thesis is to to develop a new prediction model to help find out the optimum routes and time windows for scenario-specific data acquisition by employing information from different specific data sources, e.g., navigation map information, regional population, city size, traffic statistics, accident statistics, construction sites, weather conditions, infrastrauctre, etc.

The effectiviness of the prediction model will be validated through real-world data acquisition project with leading automotive customers of LiangDao and the results will be compared with previous data acuiqisaton statistics.

About LiangDao:
LiangDao is a fast-growing young startup since 2018 with 70 team members focusing on developing LiDAR based applications for autonomous driving as well as for smart cities in China and Germany. With the engineering knowledge of integrating multiple high precision sensors into vehicle and the permission to collect real world traffic data in China and Europe, LiangDao has built up a big data and software development center for ground truth generation using LiDAR algorithms, scenario detection and analysis as well as traffic simulation for development, testing and validation of autonomous driving.

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