

CommonRoad Scenario Designer Web



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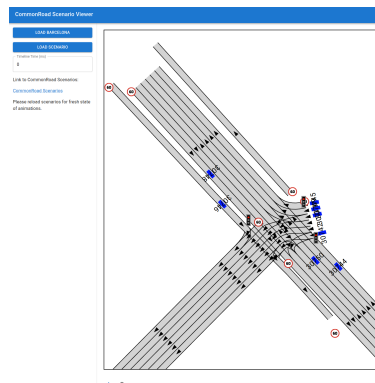
Background

[CommonRoad \[1\]](#) is a collection of benchmarks for motion planning in autonomous driving and has a rich ecosystem with a wide range of tools in the field of motion planning. The [CommonRoad Scenario Designer \[2\]](#) can be used to view, create and edit CommonRoad scenarios. To facilitate the accessibility of the tool and improve the user experience, the [CommonRoad Scenario Designer Web](#) was recently launched, so far only offering viewing and playing scenarios. Within this thesis or guided research, the application should be expanded to include editing functionality, with a focus on a balanced feature set, an intuitive usability, and a robust software architecture.

Description

First, a user study should be conducted to identify the most important features for the application and further requirements. Based on this, a feature list and a user story map should be created. The application should then be expanded step by step accordingly. The possibly required features can be divided into the following categories:

- Editing the road network of the scenario
- Editing road features such as traffic lights
- Editing traffic participants and their trajectories



After the application has been expanded to include the required features, another user study should be conducted to evaluate the usability. The results of the user study should be used to further improve the application.

References

- [1] Matthias Althoff, Markus Koschi, and Stefanie Manzing. "CommonRoad: Composable benchmarks for motion planning on roads". In: *2017 IEEE Intelligent Vehicles Symposium (IV)*. IEEE, June 2017, pp. 719–726. DOI: [10.1109/IVS.2017.7995802](https://doi.org/10.1109/IVS.2017.7995802).
- [2] Sebastian Maierhofer, Moritz Klischat, and Matthias Althoff. "CommonRoad Scenario Designer: An Open-Source Toolbox for Map Conversion and Scenario Creation for Autonomous Vehicles". In: *2021 IEEE International Intelligent Transportation Systems Conference (ITSC)*. IEEE, Sept. 2021, pp. 3176–3182.

Supervisor:

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Advisor:

Sebastian Mair

Type:

BA/GR

Research area:

Autonomous Driving

Programming language:

JavaScript, HTML, CSS

Required skills:

Basic knowledge of web development, self-motivated working

Language:

English

Date of submission:

flexible

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