Strategical and Tactical Aspects of Behavior Planning for Automated Driving on Highways

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Agenda

- Motivation and Use Cases
- General framework and architecture
- Behavior planning model
- Conclusion

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Agenda

Motivation and Use Cases

General framework and architecture

Behavior planning model

Conclusion
Motivation and Use Cases

- Working
- Comfort
- Freetime
- Reading
- Collision avoidance
- Safety
- Environment monitoring
- Fuel consumption
- Efficiency
- Traffic coordination
Motivation and Use Cases

- Accessing Highway
- Highway Junctions
- Exiting Highway
- Road Works
- Special incidents
- Normal Driving
Motivation and Use Cases

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- Highway Junctions
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- Road Works
- Special incidents
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General framework and architecture
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Automated Driving Architecture

Simulation / Test Vehicle

Environment Model

Behavior Planning

Trajectory Planning

Motion Controlling
Agenda

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General framework and architecture

Behavior planning model

Conclusion
Behavior planning model

- Simulation / Test Vehicle
- Environment Model
- Behavior Planning
- Trajectory Planning
- Motion Controlling

- Situation Analysis / Classification
- Situation Prediction
- Situation Assessment
- Decision Making
Behavior planning model

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Behavior planning model

Situation Analysis / Classification

Highway Access
Ego Position
Line Type

Objects
Driving Lane
Behavior planning model

Situation Prediction

Prediction of Traffic Behavior

75 %
25 %
Behavior planning model

- Situation Assessment
- End of Access Lane
- Front Distance
- Rear Distance
- Gap Center
- Object Velocities & Accelerations
Behavior planning model

Decision Making

Overtaking Front Car

Merging into Gap

Let Gap passing
Agenda

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Thank you for your attention!

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