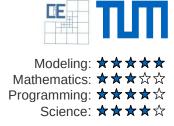
Software Lab:



An Application to Optimize Lap-times for Race Cars

Setting:

The use of autonomous vehicles is increasing, and driverless races are starting to take form. This project is aimed at driverless races where a virtual driver could be trained on a virtual racetrack.

Your Goal:

Create a combined car and track model to determine optimal racing lines and speeds for a parameterized vehicle.

Your Tasks:

- Familiarize yourself with model-based design (focus on Simscape, Vehicle Dynamics Blockset, Automated Driving System Toolbox, Mapping toolbox, optimization toolbox and the unreal engine)
- Automatically determine race-circuit geometry from satellite images
- Use circuit geometry to determine optimal racing line for point mass model
- Integrate high fidelity vehicle model into race-simulator
- Use unreal engine to display the resulting optimal lap

Supervisors

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