Optimising racing lines for a Formula Student car

OUR PROJECT

Formula Electric Belgium is a student-run electric race team which competes in Formula Student, the world's largest competition for engineering students. We aim to push the limits of performance, innovation and sustainability within electric racing every year, which is only possible with the help of our Thesis students. These pioneers are responsible for performance-defining innovations within the team, and we would love for you to join our team of highly ambitious and motivated engineers. As a Thesis student, you will research, design, prototype and test your innovations alongside the full-time members which make sure the team pushes itself and the car to new heights.

AIM AND OBJECTIVE

The racetrack for our driverless car consists of different types of cones. This track can be very narrow with sharp turns and always driving in the middle makes for very inefficient lap times.

The objective is to optimise the racing line to decrease lap times as much as possible. This can be done through using heuristics and metaheuristics, trying to incrementally move towards a more optimal racing line by constantly making small adjustments to the current line. The goal is to find an efficient enough race line within a reasonable time as this will have to be computed while racing since there is no prior knowledge of the track.

The algorithm should be as efficient as possible to make sure we acquire a well-optimised racing line within a reasonable time.

PROFILE

- Experience with C/C++
- Critical thinking and creativity
- Willingness to learn new technologies
- Experience with ROS is a nice bonus
- Experience with optimisation is a nice bonus

RETURNS

- Practical experience in a high-end engineering context
- Work with the newest technologies and innovative companies
- Developing your hard- and soft-skills in a company-like environment
- Participation in the biggest student competition in the world

INTERESTED?

Send us your contact details and field of interest to

recruitment@formulaelectric.be