Driverless

Perception: Cone Detection

Green innovation meets performance

Our Project

Formula Electric Belgium is a team of engineering students who build a **Formula-Student racecar** to compete in international competitions. We design and build a brand-new car every year and compete with other teams in multiple worldwide competitions during the summer months. Formula Student is by far the biggest **engineering competition** in the world and continues to grow. From next year on, we will be competing in both the **electrical** and **driverless** competition. You can join the project as a volunteer, this allows you to contribute to the next race car whilst keeping a flexible schedule.

Tasks

To be able to let a car **drive itself** through a track of **cones**, the first step will be the detection of these cones. Each different cone has its meaning in the track, so it is crucial to **record** every single cone and tell which type of cone it is without having any **false positives** as the area where the track is driven is not a flat smooth surface, but can include walls, bushes, lights, rails, etc.

We use a **LiDAR** system that lets us drive a track even at night. We use complex filtering followed by a **light-intensity** map. This allows us to differentiate yellow cones, blue cones, and big orange cones but the **small orange cone** is not yet detected. It will be your job to detect these small orange cones.

Profile

- C++ knowledge
- Out-of-the-box thinker (creativity)
- Team player with a goal to learn

Returns

- A unique engineering experience
- Contact with companies at the leading edge of technology
- Applying your engineering skills in the real world
- Developing your hard– and soft-skills in a company-like environment
- Work in a team with young motivated engineers

Up for the challenge?

Want to do a similar case within the team? Submit your **resume** and **motivation letter** (one page) to volunteers@formulaelectric.be