

Assignment for Student One-Pager “The Future of the Automobile”

Topic: Challenges of Autonomous Driving

Due Date: October 25, 2010 / 10am

Description: Autonomous driving describes a scenario when the driver does no longer need to stay in control of the vehicle because the vehicle equipped with sensors, processors, and actuators navigates itself from start to the final destination. While this is a fascinating scenario it also is an extremely challenging goal given the complexity of traffic situations as we know them. A huge part of the challenge lies in the transition from 100% human driven vehicles to 100% autonomous vehicles with can be assumed to last at least 10 year (but probably will never reach 100%).

Describe which traffic situation you would think are the most challenging and explain why you think that is. Think about the following:

- Human perception vs. sensor perception
- Time it takes a human to become a really experienced driver
- Distractions, impairments, fatigue
- Pattern recognition vs. detailed data analysis
- Relevant vs. irrelevant information
- New mobility solutions / services and alternatives

Format: The papers serve as a preparation for the seminar discussions to capture students' thoughts, expectations, and concerns regarding the selected topic. While the papers should reflect the students' own understanding of the matter, references that were used should be listed (e.g. research, statistics, news...). All students draft their paper individually; it is not a group work.

The papers are due at the date and time stated above to allow for review and to include them into the preparation for the seminar discussions.

Students should indicate on their paper if they do not authorize the use of their paper in class, further research, or discussion with industry partners.

Credit: Students earn one point per paper towards the required two (2) points for successful completion of the course CS532 / ME302. The papers need to be sent to beiker@stanford.edu by the due date indicated above.

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