Architectures of Self-Driving Vehicles

Course Description

This course provides an overview of the main architectural aspects of a self-driving car. After introducing the hardware and software platforms, the course presents the sensor solutions necessary to provide environment perception for autonomous vehicles. Such perception yields the information used for motion control, including braking and steering. The fundamental concepts for the realization and implementation of motion control are presented, together with related safety issues (e.g., motion control under false information). The way in which a self-driving car exchanges information with the outside world is also discussed, and the main technologies and protocols are introduced. The last part of the course elaborates on the social impact of self­-driving cars: ethics, mobility, and design.

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