Propositions

accompanying the dissertation

Radar Based Road User Detection in Intelligent Vehicles

by

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1. Radars' unique capability to measure objects' velocity is a useful addition to any intelligent vehicle's object detection system.
   This proposition pertains to Chapter 5 and Chapter 6.

2. Radars' unique capability to report indirect observation via multi-path propagation is challenging to work with, but benefits the object detection system of an intelligent vehicle in certain use-cases.
   This proposition pertains to Chapter 4.

3. Radars are less researched for road user detection than other sensors, not only because of their technical properties, but also because their output is difficult for humans to interpret.

4. On the scale defined by the Society of Automotive Engineers (SAE) to categorize the levels of "self-driving", Level 3 is actually more difficult than Level 4.

5. Domain adaption among different radar sensors and their configurations will be more challenging than for LiDARs.
   This proposition pertains to Chapter 6.

6. Cultural, geographic, and architectural differences between the U.S. and countries in Europe and Asia will make Level 5 deployment in the latter regions a major challenge and delay it by decades.

7. People will treat self-driving vehicles in everyday traffic with less respect than vehicles driven by humans.

8. If Level 3, 4 or 5 cars became widely available, users would try to modify the vehicle's software to drive faster, more aggressively, or (partially) ignore traffic regulations.

9. The great interest in the trolley problem in the context of self-driving cars suggests that machine intelligence will be held to a higher standard than human intelligence.

10. The vast majority of human drivers consider their driving skills to be above average.

These propositions are regarded as opposable and defendable, and have been approved as such by the promotor prof. dr. Dariu M. Gavrila.