inf333 - Sensor Technology in the Automotive Domain

Module label: Sensor Technology in the Automotive Domain
Module code: inf333
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Computing Science > Technische Informatik
- Master's Programme Engineering of Socio-Technical Systems > Embedded Brain Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems > Human-Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems > Systems Engineering

Contact person:
Module responsibility: Frank Köster
Authorized examiners: Die im Modul Lehrenden

Entry requirements:
Skills to be acquired in this module:
This module introduces the principles of sensors and sensor-systems as well as data-fusion in the automotive domain.

Professional competences:
The students:
- Discuss different levels/diverse levels sensor-technologies
- Discuss sensor-data fusion (multi-level fusion)
- Discuss Kalman-Filter
- Discuss in-vehicle data-processing
- Discuss car2x-technologies
- Design simple multi-sensor systems
- Evaluate multi-sensor systems

Methodological competences:
The students:
- Analyze multi-sensor systems
- Design multi-sensor systems
- Evaluate multi-sensor systems

Social competences:
The students:
- Work in teams
- Discuss their outcomes appropriately

Self-competences:
The students:
- Acknowledge the limits of their ability to cope with pressure during the work on the topics of the module

Module contents:
- Sensor-technologies
- Data fusion (multi-level fusion)
- Kalman-Filter
- In-vehicle data-processing
- Car2x-technologies (ITS G5 and 5G)
- Multi-sensor and multi-level fusion architectures
Reader’s advisory

Suggested reading:


Links

Language of instruction: English
Duration (semesters): 1 Semester
Module frequency: once a year
Module capacity: 100
Module level: AS (Akzentsetzung / Accentuation)
Modulart: Pflicht o. Wahlpflicht / compulsory or optional
Lern-/Lehrform / Type of program: V+Ü

Vorkenntnisse / Previous knowledge

Examination

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<thead>
<tr>
<th>Course type</th>
<th>Time of examination</th>
<th>Type of examination</th>
<th>Practikal Work and oral exam</th>
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<tbody>
<tr>
<td>Final exam of module</td>
<td>At the end of the lecture period</td>
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<tr>
<th>Lecture</th>
<th>2.00</th>
<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
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<td>28 h</td>
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Total time of attendance for the module

- 56 h