

Stream A: Automated Driving

- Organizer: Andreas Becker (FH Dortmund): andreas.becker@fh-dortmund.de
- Target Group: Embedded System, Digital Transformation, Computer Science, Electronics & Electrical Engineering, Information Technology
- Short Description: Implementation of a driver assistance function (automatic emergency braking) for the Audi Autonomous Driving Cup vehicle
- Available Seats: 10
- Prerequisites: Knowledge in signal processing, Matlab/Simulink, C/C++
- Recognition of Credits:
 - **Elective** for Master Embedded Systems, Signals and Systems for Automated Driving (MOD-E04), practical part of the module (50%)
 - Optional for Master Digital Transformation: Mini Project in Scientific & Transversal Skills 1 & 2 or elective (via Ruhr Master School, see above)
 - Master Informatik: *Masterseminar* => 50% of the assignments (equals 3 ECTS), in combination with a homework about the workshop topic the module with 5 ECTS can be awarded.
 - Master Informationstechnik: *Projektarbeit 1 oder 2* => 50% of the assignments (equals 3 ECTS), in combination with a homework the module with 6 ECTS can be awarded (confirmation with Ingo Kunold).

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Time	Monday	Tuesday	Wednesday	Thursday	Friday
09:00-11:00	Emil-Figge-Str. 43 (REFA): ALL: Opening and Introduction to the Spring School	Mini Lecture: TBD	Mini Lecture: vehicle trajectory estimation and driving dynamics	Mini Lecture: TBD	Group Work: in teams => preparing presentations
11:00-12:30	Introduction, Joint formulation of the task	Group Work: Project Planning and Schedule, Concept for research	Group Work: => prepare questions and slides mid term presentation	Group Work: in teams	Team Presentation: Trial Run & Feedback
12:30-13:30	Lunch break	Lunch break	Lunch break	Lunch Break	Lunch Break
13:30-15:30	Mini Lecture: Introduction to ADTF	Team Presentation: Concepts & Plan	Location (xxx): Mid term presentation, Q&A	Group Work: in teams	Emil-Figge-Str. 43 (REFA): presentations and rehearsal
16:00-18:00	Team Setup: => Roles & Infrastructure	Group Work: in teams	Group Work: in teams ALL: Social Event	Group Work: in teams	ALL: Kick out and feedback (evaluation)

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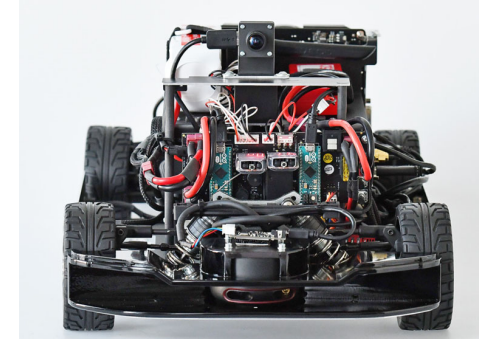
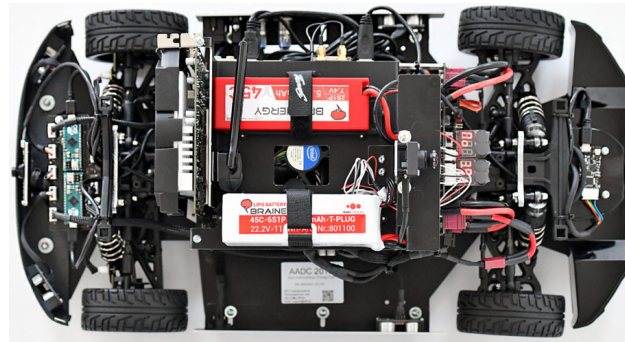
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¹ **Meeting time:** Monday at 8:30 a.m. **Meeting point :** lobby of A&O hostel

² Check slide 'Social events'

Contact person: Prof. Dr. Andreas Becker

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- Goal: Implementation of Automatic Emergency Braking
- Technology used:
 - Laserscanner RPLIDAR A2
 - Video camera
 - 9-axis motion tracking sensor
 - ADTF
- Teams: 2 Teams (max. 5 per team)
 - Team A: Vehicle dynamics and path prediction
 - Team B: Obstacle detection

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