

Contents

Automotive Architectures & Machine Learning

Session Chair: Georg Schildbach

- 01 Physics Informed Deep Learning for Motion Prediction in Autonomous Driving..... 7**
P. Tischmann, R. Baumann, A. Stockem Novo, University of Applied Sciences Ruhr West, Mülheim a. d. Ruhr
- 02 Confidence Tuned Localization through Learning in the Loop..... 13**
S. Schütte, T. Bertram, TU Dortmund; M. Kuhn, ZF Automotive Germany GmbH, Düsseldorf

Advanced Control Strategies & Trajectory Planning

Session Chair: André Schäfer

- 03 Application of Basis-Splines for Trajectory Planning in Highway Scenarios..... 18**
P. Dorpmüller, T. Bertram, TU Dortmund; T. Schmitz, N. Bejagam, ZF Automotive Germany GmbH, Düsseldorf
- 04 On the Design of Interaction-Aware SCMPc for Highway Merging Scenarios 24**
R. Kensbock, G. Schildbach, University of Lübeck

Poster Session

Session Chair: Martin Keller

- 05 Coaction between Automobiles and Mobile Robots - Interoperability for Affordable Last Mile Delivery Solutions 30**
M. Y. Khandelwal, S. Tendulkar, G. A. Kolbai, F. Schrödel, Schmalkalden University of Applied Sciences, Schmalkalden
- 06 AI-Based Localization and Classification of Visual Anomalies on Semiconductor Devices..... 36**
M. K. Le, J. Z. J. Chia, D. Peskes, Elmos Semiconductor SE, Dortmund,
- 07 Machine learning for improving the trustworthiness of sensors..... 41**
G. Hussain, L. G. Thekkumthala, P. A. William, M. G. Wahl, University of Siegen
- 08 Vision-based Autonomous Trajectory Drifting using Deep Reinforcement Learning..... 47**
F. Domberg, B. Barkow, G. Schildbach, University of Lübeck

Infrastructure and Safety

Session Chair: Bendikt Alt

- 09 Challenges of Infrastructures for autonomous Buses in Cities: A review..... 53**
A. Becciu, Nuraxys GmbH, Overath; E. N. Kamau, University of Applied Sciences Cologne

10 Automated failure and tolerance analysis as a combined consideration for the proof of safety of electronic systems.....	58
R. Müller-Hainbach, L. Ergün, S. Butzmann, University of Wuppertal	

Machine Learning/Deep Learning in the automotive context

Session Chair: Alessandro Becciu

11 CSAM anomaly detection with AI.....	63
J. C. Z. Jie, R. Krumm, Elmos Semiconductor SE, Dortmund	
12 Investigation of the real-time feasibility of NMPC for air-path control in automotive fuel cell systems	67
T. A. Nguyen, V. Neisen, D. Abel, RWTH Aachen University, Aachen	
13 Time-Triggered Organic Computing Architecture for Autonomous Driving Vehicles Using List Scheduling.....	73
M. Qosja, S. Meckel, R. Obermaisser, University of Siegen	

Future of Transportation

Session Chair: Edwin Kamau

14 Robust Navigation of Autonomous Transport Units in the Extractive Industry	79
D. Benz, D. Abel, RWTH Aachen University, Aachen	

Innovations in Electronics

15 Self-Locked Asynchronous Controller for RISC-V Architecture on FPGA.....	84
F. Deeg, S. M. Sattler, Friedrich-Alexander-University Erlangen-Nuremberg	
16 Integration of a 77GHz automotive radar system into plastic surfaces using MID-technology	89
T. Mager, J. Diri, Fraunhofer Research Institute for Mechatronic Systems Design IEM, Paderborn; P. Kneuper, S. Kruse, C. Scheytt, Paderborn University, Paderborn	