VDI

5th International VDI Conference

Automotive AI

Transforming Transportation: Automotive AI Driving the Future Forward

December 6 and 7, 2023, Frankfurt

- Artificial Intelligence for Automotive R&D
- Embedded AI
- Large Language Models (LLM) and Natural Language Processing (NLP)
- Testing of AI-Systems
- Artificial Intelligence for Material Models
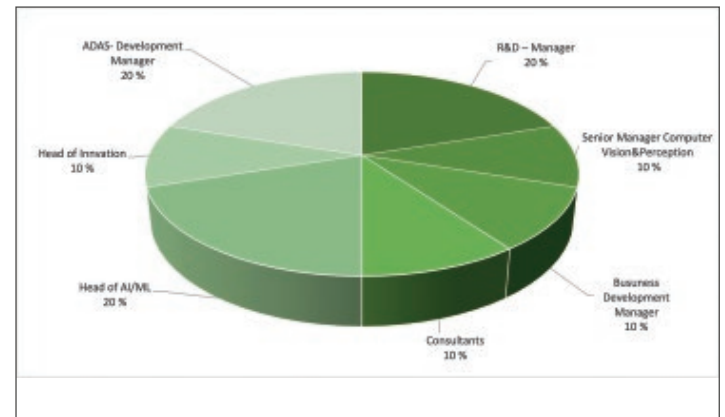- Safe AI and Compliance

Meet international Experts from:

Bundesamt für Sicherheit in der Informationstechnik · CARIAD · Continental · EDAG · Google · Infineon · McKinsey & Company · Mercedes-Benz · MHP A Porsche Company · REVO AI · Sounce BY MHP · SPREAD · TÜVIT TÜV NORD GROUP
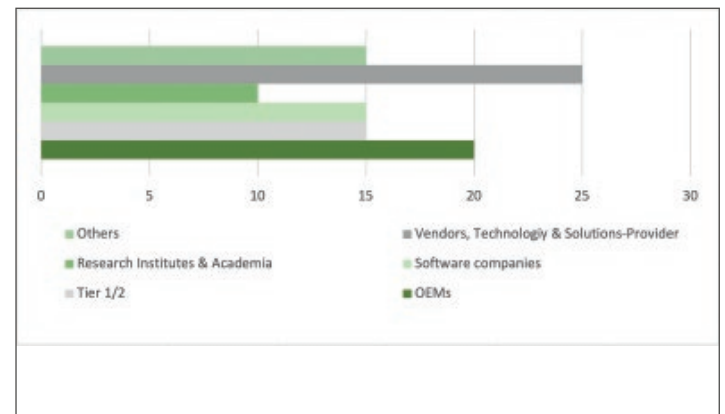
About us

VDI

The Association of German Engineers (VDI) is one of the largest technical-scientific associations in Europe. Throughout the years, the VDI has successfully expanded its activities nationally and internationally to foster and impart knowledge about technology-related issues. As a financially independent, politically unaffiliated and non-profit organization the VDI is recognized as the key representative of engineers both within the profession and in public.

Reasons to attend

Meet industry leaders and Start Ups to debate on the latest trends and challenges of AI in the automotive industry

Get informed from key industry players how AI can be used as a tool within the enterprise

Discuss the legal, regulatory and ethical frameworks of AI

Expand your professional network and forge valuable connections that pave the way for exciting collaborations and partnerships.

Engage with internationally renowned AI specialists during interactive sessions, breaks and at the evening reception

Expected Participants according to Functions

Expected Participants according to Industries

09:00 Registration & welcome coffee

10:00 **Chair's welcome and opening Address**
Stefan Suwelack, CEO and Co-Founder, Renumics, Germany

Challenges and Use Cases in AI in Automotive

10:15 The Path to Business Value from Artificial Intelligence and Generative AI
- Business value creation potential for automotive companies
- Typical challenges of industrial companies
- Success factors for implementing use cases at scale

Dr. Tarek Kasah, Partner and Dr. Florian Homann, Associate Partner, both: McKinsey & Company, Germany

10:45 AI for Digital Tire Management. How Deep Learning and Software can support Tire Management in the Fleet Business
- Tire management
- Fleet service
- Artificial intelligence

Dubravko Dolic, Head of Applied Analytics & AI, Continental Tires, Germany

11:15 ☕ Networking & coffee break

11:45 Utilizing AI for R&D, Transforming In- Cabin Consumer Experiences & Powering Efficient Operations for the modern Automotive Industry
- AI for R&D, transforming in- cabin consumer experiences and powering efficient operations for the modern automotive industry
- Infusing AI within the vehicle and optimizing manufacturing processes
- Transforming pre and post purchase sales processes

Anant Vikram, Lead Presales - Automotive, Google Germany Gmbh, Germany

12:15 Integrated Intelligence – Combining Human and Artificial Intelligence for new Core Competencies
- AI for strengthening the efficiency of specific processes
- Integration of AI with human expertise to achieve intelligence-based core competencies
- Systematic framework for generating growth and innovation beyond optimization and efficiency
- The role of the innovation ecosystem

Prof. Dr. Ulrich Lichtenthaler, ISM, Germany

12:45 AI in Automotive: The Past, the Present, and Making AI Work in the Future
Jan Zawadzki, Co-Managing Director & CTO, CertifAI, Germany

13:15 🍽 Lunch

Embedded AI

14:45 Embedded AI in Automotive Applications
- Virtual sensors for eDrive applications
- Methodology for virtual sensors

- Solving control problems with reinforcement learning

Stefan Studer, A.I Research, Mercedes-Benz Group AG, Germany

15:15 Zonal E/E Architecture and Embedded AI Processing: Addressing Future Trends in Sensors, Actuators and Zone Controller
- Zonal E/E architecture preferred by automotive OEMs for continuous integration, reduced complexity and cost
- Embedded AI integration in automotive research shows promising outcomes: improved detection, prediction, efficiency
- Distinct requirements for embedded AI processing in endpoint sensors/ actuators versus zone controllers

Muhammad Hassan, Platform Architect (Embedded AI Acceleration), Co-Authors: Daniel Auge, Software Architect (Embedded AI Acceleration), Juergen Schaefer, Senior Principal Engineer (Technical Marketing), all: Infineon Technologies AG, Germany

Large Language Models and Natural Language Processing

15:45 The Potential of Large Language Models in the Automotive Industry
- The evolution of LLMs from text classification to chat bots
- Conversational AI agents based on LLMs
- Techniques of adapting the LLMs to specific domains

Dr. Alaa Alameer Ahmad, Machine Learning Software Developer, Co-Author: Adrian Gabriel, Machine Learning Software developer, both: CARIAD, Germany

16:30 ☕ Networking & coffee break

17:00 Aidentify - A.I. redefines the Evaluation and Writing of Short Technical Texts in Automotive Development
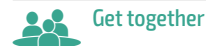- Usage of NLP to handle the increasing volume of short texts generated in the automotive industry
- AI-powered semantic analysis and editing of short technical texts in automotive development
- Features of approach: Text quality improvement, consistency checks in tickets, knowledge extraction and clustering
- The pipeline for the realization of the extraction of similar texts from a database and their semantic processing

Jochen Nüßle, Software Developer and Nathalie Klinger, Competencemanagement A.I, both: EDAG Engineering, Germany

17:30 Engineering Intelligence meets LLM: How to hold your Product Launch Date
Philipp Noll, CEO, Spread AI, Germany

18:00 Closing Remarks & End of Day 1

👥 **Get together**

At the end of the first conference day we kindly invite you to use the relaxed and informal atmosphere for in-depth conversations with other participants and speakers.

09:30 Chair's Opening Remarks
Stefan Suwelack, CEO and Co-Founder, Renumics, Germany

AI For Product Development and Production

09:45 AIMM: Artificial Intelligence for Material Models
- Developing ML-based material models for simulation in the car industry
- Training of ML-material models using synthetic data
- Training of ML-material models using experimental data
- ML-material models in crash and metal forming simulation

Dr. Said Jamei, Project Manager, Co-Authors: **Pauline Böhringer**, **Dr. Markus Feucht**, **Dr. Joachim Sprave**, all Mercedes-Benz AG, Germany

10:15 How AI Optimizes Product Quality – Industry Use Cases with Source by MHP
- Use cases of AI in production & development -Retro, status quo & outlook
- How acoustic data can be recorded, processed, and utilized to train AI models
- How automated new data from production is used to enable continuous model optimization

Dr. Johannes Märkle, Manager Data Science and **Simon Weiß**, Product Manager, both: MHP - A Porsche Company, Germany

10:45 AI-Assisted Sensor Data Management for AV Development
- AI-assisted strategies and tools for discovering relevant sequences from the plethora of recording data
- further processing steps for development and testing
- creation of scenarios for large-scale simulation in the cloud

Nikolas Hemion, Manager Artificial Intelligence Group, dSPACE GmbH, Germany

11:15 ☕ Networking & coffee break

11:45 Increasing Development Productivity with AI-based Test Generation
- Why is the exploding V&V effort still unsolved?
- How can AI-driven solutions contribute to tackling the V&V effort?
- What is the one-click solution for deriving implemented tests from high-level requirements?

Dr. Raphael Pfeffer, Managing Director, Head of Solutions, RevoAI GmbH, Germany

Safe AI and Compliance

12:15 Auditing AI Systems in the Automotive Sector: Challenges and Solution Approaches
- The use of AI leads to new challenges, also in the context of IT security
- Requirements, test methods and test tools are currently under active development
- Trustworthy use of AI will be supported by technical guidelines of the BSI and national and international Standardization and regulation activities

Dr. Arndt von Twickel, Head of Department, BSI, Germany

12:45 Assessing the Trustworthiness of Automotive AI
- Aspects of Safety and Trustworthiness of AI
- Incorporation of Safety Aspects into Automotive AI Development
- Technical Realization

Dr. Fabian Küppers, AI Safety Specialist, e:fs TechHub GmbH, Germany

13:15 🍽 Lunch

14:15 The Achilles Heel of Vehicle Automation: Examining Vulnerabilities of AI Applications
- Discussing AI-specific vulnerabilities and their impact on security & safety
- Assessing vulnerabilities from a security focused perspective
- Gaps and challenges in current and upcoming standardization
- Approaches and "best-practices" for examining and auditing AI-based functionality

Vasilios Danos, Lead Expert AI, TÜV Informationstechnik GmbH, Germany

14:45 Globally Sourced Data for AI Training: The How-To of Ethical and Compliant Data Collection
- Intersection of global data sourcing for AI and Privacy regulations
- Case Study of an autonomous vehicle data journey
- Data protection as an opportunity for innovation

Marian Gläser, CEO an Co-Founder, BrighterAI, Germany

15:15 Closing Remarks

15:30 End of Conference

📅 **Upcoming Events**

Exhibitors

TÜV Informationstechnik GmbH

Exhibition / Sponsoring

If you want to meet with and reach out to the first-rate experts attending this VDI conference and to powerfully present your products and services to the well-informed community of conference participants, please contact:

Jasmin Habel
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Phone: +49 211 6214-213
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Become a speaker at our international VDI Automotive Conferences. Make yourself known in the industry and discuss best practice examples with other international experts. We are looking for speakers on: Software in Automotive, Open Source, Cyber Security, E/E- Architectures and Board Networks.

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Conference venue
Leonardo Royal Hotel Frankfurt
Mailänder Str. 1
60598 Frankfurt, Germany
Phone: +49 69/6802-0
Email: info.royalfrm@leonardo-hotels.com

Hotel room reservation: A limited number of rooms has been reserved for the benefit of the conference participants at the Leonardo Royal Hotel Frankfurt. Please refer to "VDI Conference". For more hotels: www.vdi-wissensforum.de/hrs

VDI Wissensforum service package: The conference package includes the conference documents (online), beverages during breaks, lunch and the get-together on December 06, 2023.

Conference attendance conditions and terms can be found on our website: www.vdi-wissensforum.de/en/terms-and-conditions/

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Registration

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Automotive AI

VDI

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Yes, I will participate as follows:

Participation Fee + VAT
☐ **VDI Conference 06.-07.12.2023**
(01KO933023) **€ 1990**

☐ I am interested in sponsoring and/or exhibition

☐ Participation Fee VDI-Members* Save 50 € for each Conference Day.
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