Prof. Dr.-Ing. Raoul Daniel Zöllner

Heilbronn University of Applied Science
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CURRICULUM VITAE

Academic Qualifications

2005 Ph.D. in Computer Science / Robotics :
"Learning of two hand fine manipulation tasks"
University of Karlsruhe, Karlsruhe, Germany
Advisors: Prof. Dr. Rüdiger Dillmann , University of Karlsruhe
Prof. Dr. Gert Hirzinger, German Aerospace Center

1999 Degree in Computer Science (1999)
University of Karlsruhe, Karlsruhe, Germany
Courses focused on:
Robotics, Knowledge-based Systems, Active Vision, Biomedical Science.

Employment History

Heilbronn University of Applied Science

2017 Vice President Research, Transfer and Innovation
2017 Head of the Institute for Automotive Technology and Mechatronics
2010 Vice Dean Faculty of Electronics and Mechanics
Head of Studies Automotive Systems Engineering
2009 Professor of Computer Science and Driver Assistance Systems

Siemens Corporate Technology and Research, Munich, Germany

2006 Research Scientist, Consultant for Autonomous Systems
Department: Information & Communications

University of Karlsruhe, Karlsruhe, Germany

2004 Senior Research Fellow
Institute of Computer Science and Engineering
Industrial Applications of Computer Science and Micro Systems
Head of of Interactive Learning Group
1999 Research Fellow
Institute of Computer Science and Engineering
Industrial Applications of Computer Science and Micro Systems
Prof. Dr.-Ing. R. Dillman

Academic and Lecturing

Computer Science (Bachelor); Software Engineering (Bachelor), Embedded Systems (Bachelor) Image processing (Bachelor); Digital Signal Processing (Master); Autonomous Systems (Master); Robotic Systems (Master)

Research Topics

Autonomous systems, AI, System Architectures, Simulation Systems, Image Processing and Visual Perception, Situation Understanding, Probabilistic Sensor Data Fusion and Learning Processes, Cognitive Mobile Systems, Driver Assistance Systems

Research Leadership

- Permanent visiting scientist at the Research Center for Computer Science Karlsruhe (FZI)
- Member of the Advisory Board of the Center for Machine Learning HHN
- Member of the Advisory Board Digital Hub Heilbronn-Franken
- Member of the Board of Directors of MAFINEX founders' association Entrepreneur Rhein-Neckar e.V.
- Member of the Advisory Board for the Cognitive Research and Innovation Center Service Systems, Fraunhofer Kodis
- Invited keynote speaker for international events, served as s chair for international conferences, reviewer IEEE, VDI

Publications in the last 5 years

1. Buyer, J.; Vollert, M.; Kocsis, M.; Sußmann, N.; Zöllner, R. (2017): Image-based multi-target tracking using a multi-layer particle filter and extended EM clustering. In: 2017 IEEE International Conference on Multi- sensor Fusion and Integration for Intelligent Systems (MFI). November 16- 18, 2017, Daegu, Korea. Piscataway, NJ: IEEE, S. 620–625.
2. Kocsis, M.; Buyer, J.: Sußmann, N.; Zöllner, R.; Mogan, G. (2017): Autonomous Grocery Delivery Service in Urban Areas. In: IEEE International Conference on Smart City, Bangkok, 2017.
3. Kocsis, M.; Sußmann, N.; Buyer, J.; Zöllner, R.: Safety concept for autonomous vehicles that operate in pedestrian areas. In: 2017 IEEE/SICE International Symposium on System Integration (SII), Taipei, Tai- wan, 2017, S. 841–846. DOI: 10.1109/SII.2017.8279327.
4. BuyerJ.,Vollert M.;KocsisM.;SußmannN.;ZöllnerR.(2018):Multi-objectTrackingBasedonaMulti-layer Particle Filter for Unclustered Spatially Extended Measurements. In: S. Lee, H. Ko und S. Oh (Hg.): Multisensor Fusion and Integration in the Wake of Big Data, Deep Learning and Cyber Physical System: Springer International Publishing, S. 219-238.
5. Fleck,T.;Daaboul,K.;Weber,M.;Schörner,P .;WehmerM.;Doll,J.;Orf,S.;Sußmann,N.;Hubschneider, C.; Zofka, M.R.; Kuhnt, F.; Kohlhaas, R.; Baumgart, I.; Zöllner, R.; Zöllner, J.M.: Towards Large Scale Urban Traffic Reference Data. Smart Infrastructure in the Test Area Autonomous Driving Baden-Württem- berg. In: Intelligent Autonomous Systems 15 - Proceedings of the 15th International Conference IAS-15, Baden-Baden, Germany, June 11-15, 2018, S. 964–982.
6. Marsden, N.; Bernecker, T.; Zöllner, R.; Sußmann, N.; Kapser, S. (2018): BUGA:Log – A Real-World La- boratory Approach to Designing an Automated Transport System for Goods in Urban Areas. In: 2018 IEEE International Conference on Engineering, Technology and Innovation (ICE/ITMC). Stuttgart, 17.06.2018 - 20.06.2018: IEEE, S. 842–850, DOI: 10.1109/ICE.2018.8436361.
7. Buyer, J., Waldenmayer, D., Sußmann, N., Zöllner, R., Zollner, J.M., 2019. Interaction-Aware Approach for Online Parameter Estimation of a Multi-lane Intelligent Driver Model, in: 2019 IEEE Intelligent Transpor- tation Systems Conference (ITSC). Presented at the 2019 IEEE Intelligent Transportation Systems Con- ference - ITSC, IEEE, Auckland, New Zealand, pp. 3967–3973. https://doi.org/10.1109/ITSC.2019.8917257
8. Mohamed, M.E., Gotzig, H., Zöllner, R., Maeder, P., 2019. A convolution neural network based machine learning approach for ultrasonic noise suppression with minimal distortion, in: 2019 IEEE International Ultrasonics Symposium (IUS). Presented at the 2019 IEEE

International Ultrasonics Symposium (IUS), IEEE, Glasgow, United Kingdom, pp. 1629–1634. https://doi.org/10.1109/ULTSYM.2019.8925655
9. Mohamed, M.-E., Gotzig, H., Zöllner, R., Maeder, P., 2019. A Machine Learning Approach for Detecting Ultrasonic Echoes in Noisy Environments, in: 2019 IEEE 89th Vehicular Technology Conference (VTC2019-Spring). Presented at the 2019 IEEE 89th Vehicular Technology Conference (VTC2019- Spring), IEEE, Kuala Lumpur, Malaysia, pp. 1–6. https://doi.org/10.1109/VTCSpring.2019.8746680
10. Mohapatra, S., Gotzig, H., Yogamani, S., Milz, S., Zöllner, R., 2019. Exploring Deep Spiking Neural Net- works for Automated Driving Applications, in: Proceedings of the 14th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications. Presented at the 14th Inter- national Conference on Computer Vision Theory and Applications, SCITEPRESS - Science and Techno- logy Publications, Prague, Czech Republic, pp. 548–555. https://doi.org/10.5220/0007469405480555
11. Sussmann, N., Kocsis, M., Zöllner, R., 2019. Neue Technologiekonzepte zur urbanen autonomen Logis- tik, in: Bauer, B., Wittenberg, C. (Eds.), Tagungsband AALE 2019: autonome und intelligente Systeme in der Automatisierungstechnik : 16. Fachkonferenz, Heilbronn. VDE-Verlag Gmbh, Berlin, pp. 17–21.
12. Kocsis, M.; Winckler, J.; Suβmann, N.; Zöllner, R. (2020), Interactive Mission Planning System of an Au- tonomous Vehicle Fleet that Executes Services. In: 2020 IEEE 23rd International Conference on Intelligent Transportation Systems (ITSC). IEEE, September. S. 1-6.
13. ZÖLLNER, Raoul; BERNECKER, Tobias; KOCSIS, Mihai. Autonome Quartierszustellung im Spannungsfeld zwischen Fahrzeugtechnik und Logistik. Making Connected Mobility Work: Technische und betriebswirtschaftliche Aspekte, 2021, S. 603-620.

He bronn 15.06.2021 Prof. Dr.-Ing. R. Zö ner