



**Dear reader,**

Welcome to the sixth edition of the KI Familie Newsletter!

After the first of the four KI Familie projects celebrated its conclusion, this newsletter takes a look back at the final event in June. In addition to that, our project highlights feature among others a newly published joint white paper in KI Wissen and new interesting publications on anomaly detection and synthetic data in KI Data Tooling.

We hope, you will enjoy the newsletter and we are happy to hear your feedback and suggestions.

The KI Familie Editorial Team

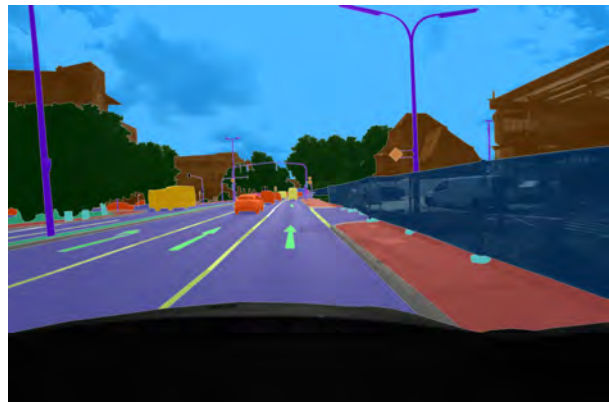
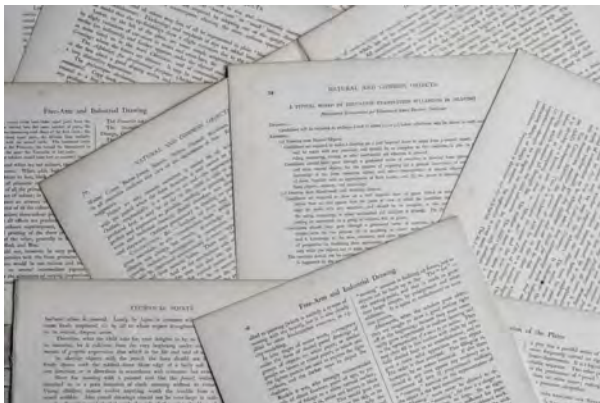


## Successful project completion of KI Absicherung

On June 23, 2022, the partners of the KI Absicherung consortium gathered for the official project closing event in Berlin and presented the results of their three years of research and development work.

[Read more](#)

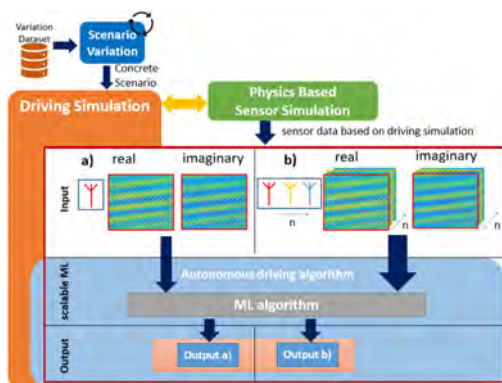
## Project Highlights



## Joint White Paper on two deliverables published

In the project KI Wissen, two deliverables on the topics of domain knowledge (automotive knowledge) and validation of the predictions of an AI were pending. The results of the work on the two deliverables have now been published in a joint white paper and present more than 50 methods concerning those topics.

[Read more](#)



## The use of synthetic data with different radar antenna configurations for ML-Tasks

The way towards a complete data solution also contains the use of synthetic radar data. In this context, a new publication investigates the different radar antenna configurations and a simulation toolchain to generate raw radar imaginary and quadrature channel data.

[Read more](#)



## Survey on Anomaly Detection Methods published at CVPR workshop

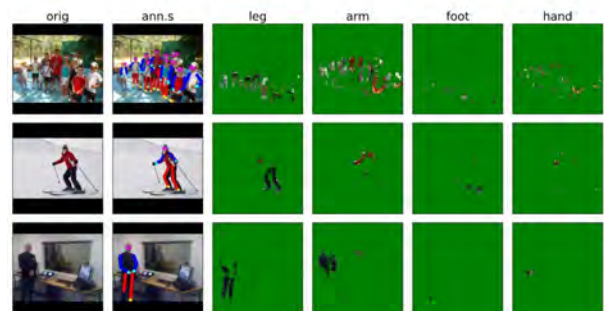
A new publication in KI Data Tooling sheds light on current methods to detect rare scenes and scenarios in data or in online applications for autonomous driving.

[Read more](#)

## Annotations for data set started in KI Delta Learning

To keep up with shorter innovation cycles, KI Delta Learning aims to develop methods to ensure continuous learning. While still collecting data with the test vehicle, the project has now started with the annotation process. This is a further important step to ensure a useful database for the further work in the project.

[Read more](#)



## KI Wissen: Two new publications concerning knowledge extraction

Knowledge extraction is one of the core issues in KI Wissen. For this purpose, different methods for extracting knowledge are investigated and developed. Among other things, this should contribute to the explainability and analyzability of AI systems. New publications now shed light on two of those methods.

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# Events



## **OSS.5 Europe**

28-30 September

Berlin

[Find out more](#)

## **Auto.AI Europe**

28-30 September

Berlin

[Find out more](#)

## **3rd Autonomous Vehicle Vision Workshop -ECCV 2022**

23 October

Tel Aviv

[Find out more](#)

## **SAIAD - ECCV 2022**

24 October

Tel Aviv

[Find out more](#)

## **Tech.AD**

13-15 November

Dearborn, Michigan

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## **Car.HMI**

13-15 November

Dearborn, Michigan

[Find out more](#)

## **ICECCME 2022**

16-18 November

Maldives

[Find out more](#)

# Academic Corner - KI Familie Publications



## **Highly Automated Corner Cases Extraction: Using Gradient Boost; Quantile Regression for AI Quality Assurance**

Niels Heller, Namrata Gurung

[Read more](#)

## **Uncertainty Quantification and Resource-Demanding; Computer Vision Applications of Deep Learning**

Julian Burghoff, Robin Chan, Hanno Gottschalk, Annika Mütze, Tobias Riedlinger, Matthias Rottmann, Marius Schubert

[Read more](#)

## **Revisiting the Evaluation of Deep Neural Networks for Pedestrian Detection**

Patrick Feifel, Benedikt Franke, Arne Raulf, Friedhelm Schwenker, Frank Bonarens, Frank Köster

## **Object Permanence in Object Detection; Leveraging Temporal Priors at Inference Time**

Michael Fürst, Priyash Bhugra, Rene Schuster, Didier Stricker

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## **Feasibility of Inconspicuous GAN-generated Adversarial Patches against Object Detection**

Svetlana Pavlitskaya, Bianca-Marina Codău and J. Marius Zöllner

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## **Verification of Sigmoidal Artificial Neural Networks using iSAT**

Dominik Grundt, Sorin Liviu Jurj

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## **F2DNet: Fast Focal Detection Network for Pedestrian Detection**

Abdul Hannan Khan, Mohsin Munir, Ludger van Elst

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## **SViT: Hybrid Vision Transformer Models with Scattering Transform**

Tianming Qiu

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## **Impacts of Data Anonymization on Semantic Segmentation**

Jingxing Zhou, Jürgen Beyerer

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## **MotionMixer: MLP-based 3D Human Body Pose Forecasting**

Arij Bouazizi Ulrich Kreßel, Adrian Holzbock, Klaus Dietmayer, Vasileios Belagiannis

[Read more](#)

## **Uncertainty Quantification and Resource-Demanding Computer Vision Applications of Deep Learning**

Julian Burghoff, Robin Chan, Hanno Gottschalk, Annika Mütze, Tobias Riedlinger, Matthias Rottmann, Marius Schubert

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## **Verifying Safety of Safety-Critical Systems with Rare Events via Optimistic Optimization**

Tabea Henning, Daniel Grujic, Tino Werner, Birte Kramer, Eike Möhlmann

## **Continual Unsupervised Domain Adaptation for Semantic Segmentation using a Class-Specific Transfer**

Robert A. Marsden, Felix Wiewel, Mario Döbler, Yang Yang and Bin Yang

[Read more](#)

## **Hardware Execution Time Prediction for Neural Network Layers**

Adrian Osterwind, Julian Droste-Rehling, Manoj-Rohit Vemparala, Domenik Helms

## **Using Network Architecture Search for Optimizing Tensor Compression**

Arunachalam Thirunavukkarasu, Domenik Helms

## **SF2SE3: Clustering Scene Flow into SE(3)-Motions via Proposal and Selection**

Leonhard Sommer, Philipp Schröppel, Thomas Brox

[Find out more](#)

## **End-to-End Single Shot Detector using Graph-based Learnable Duplicate Removal**

Shuxiao Ding, Eike Rehder, Lukas Schneider, Marius Cordts, Jürgen Gall

[Find out more](#)

**A Benchmark and a Baseline for Robust Multi-view Depth Estimation**

Philipp Schröppel, Artemij Amiranashvili, Jan Bechtold, Thomas Brox

[Read more](#)

**Automotive Radar Antenna Configurations and their Impact on Machine Learning Approaches: A Case Study**

Dominik Salles, Kmeid Saad

**Closing the Domain Gap between Synthetic and Real-world Data for Semantic Segmentation by cGAN**

Claudia Drygala, Matthias Rottmann, Hanno Gottschalk

## Contact us for comments & feedback

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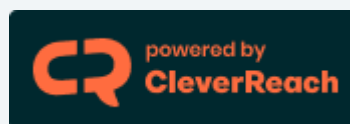
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