



## From the park

### The National Research Data Infrastructure introduces itself

In 2020, the National Research Data Infrastructure (NFDI) e.V. was founded. Scientists across all disciplines come together to improve the accessibility and findability of data and thus make research faster and better. The directorate of the NFDI association has been based in the TPK since July 2020.



## News

### HsKA Awards for the best among the best.

For the first time, the award for the 13 best graduates of the Karlsruhe University of Applied Sciences took place in an internal university online event. The Technologiepark Karlsruhe GmbH was able to present its award to Adrian Wörle, master's graduate of the degree course computer science. Mr. Wörle dealt with the topic "Detecting and counting objects in outdoor areas with neural networks using the example of model figures".

## Latest news



## What else...

### Reopening of the TPK Casino on February 15th, 2021

The ES Catering team is looking forward to offering you meals on site again from February 15, 2021, initially only to take away.

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## The National Research Data Infrastructure introduces itself

The amount of data is increasing rapidly in all scientific disciplines. How can this data serve as the basis for faster and better research results? Essential requirements therefore are an easily accessible and permanent access to the data as well as the willingness of the persons and organizations generating the data to share the data promptly and with quality assurance. The federal and state governments support the National Research Data Infrastructure (NFDI) with the aim of making valuable data from all research disciplines sustainably usable for the entire German science system. The NFDI was founded as an independent association at the end of 2020. The founding and development phase was significantly accompanied by the FIZ Karlsruhe and the Karlsruhe Institute of Technology (KIT). These two institutions were also mainly responsible for it. The directorate of the NFDI association is located in the Technologiepark Karlsruhe (TPK) and currently consists of seven employees. Even if the rooms can only be used with reduced occupancy due to the Corona requirements, the NFDI team already feels very comfortable in the TPK!



## HsKA Awards for the best among the best

This year, for the first time, the HsKA awards for the 13 best graduates of The Karlsruhe University of Applied Sciences have been handed out by Prof. Dr. Angelika Altmann-Dieses, prorektor for studies, teaching and international affairs in an internal university online event.

In this event we were able to present the prize of the Technologiepark Karlsruhe GmbH to Adrian Wörle, master's graduate of the degree course computer science. Mr. Wörle dealt with the topic "Detecting and counting objects in outdoor areas with neural networks using the example of model figures". He explains: "The thesis arose from the idea of how cow herds can be counted efficiently. The scenario was then expanded to include cars, sheep and horses. The basic procedure would be to fly over the crowd with a drone, take a picture and use a neural network to detect the objects on it. To make this network work, it needs to be trained on images of the corresponding objects. So several thousand annotated pictures of herds/cars from a bird's eye view would be required. The effort to acquire these images is extremely costly and time-consuming. For this reason, pictures of model figures were created in the thesis, with the hypothesis that these have similar characteristics as the real objects. The thesis then examined the extent to which a network trained with model figures can detect real objects. Two types of images were created. On one hand, images in which the figures were placed on surfaces (artificial turf, ground...) and on the other hand images in which individually photographed figures are automatically drawn onto backgrounds. While the first set of images is more natural, the second one can be generated in a very short time. Finally, the network trained with model figures was able to detect the real objects very well. Especially the cars were recognized reliably and precisely. The thesis was supervised by arconsis-IT Solutions."



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Do you also have interesting reports and news about your company in the Technologie Park Karlsruhe? Then please send them to us by email in German and English. If you would like to subscribe to the newsletter or no longer wish to receive it in the future, please let us know via [tpk@techpark.de](mailto:tpk@techpark.de).

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