**Visit us at Vision in Shenzhen, China, from October 28 to 30, 2021, booth 9H37**

**Machine vision: MVTec adds HALCON 21.11 to its deep learning spectrum**

* **Instance segmentation expands range of deep learning functions**
* **Combination of classic and modern machine vision technologies**
* **HALCON 21.11 will be released on November 17, 2021**

**Munich, October 4, 2021** – MVTec Software GmbH ([www.mvtec.com](http://www.mvtec.com)), a leading international provider of machine vision software, will launch the new version (21.11) of its HALCON machine vision software on November 17, 2021. This version contains many new and optimized features that can be used to implement machine vision applications even more robustly and professionally in a lot of all industrial sectors. Among other things, the new developments include the addition of instance segmentation to the available deep learning technologies, an improved barcode reader, as well as greater usability for dictionaries and Generic Shape Matching. HALCON 21.11 also comes with a plug-in for the OpenVINO toolkit from Intel. By the time of the release, it will also be possible to use the plug-in for other software products from MVTec.

"With HALCON 21.11, we remain in step with the times. The addition of the comprehensive toolbox sets new machine vision standards for a lot of all industrial sectors. We also keep our promise of delivering crucial added value for users through continuous further developments, advanced features, and short release cycles," explains Mario Bohnacker, Technical Product Manager for HALCON at MVTec Software GmbH.

**Combining the benefits of semantic segmentation with those of object detection**

One highlight of HALCON 21.11 is the addition of instance segmentation technology to the range of deep learning functions. This technology combines the benefits of semantic segmentation with those of object detection and enables the pixel-precise assignment of objects to different classes. It is particularly useful in applications where objects are very close together, touch each other, or overlap. This is the case, for example, when gripping randomly arranged objects from bins ("random bin picking") and when identifying and measuring naturally grown structures, such as organic material.

MVTec has also improved the barcode reader for the 128/GS1-128 code. Thus, it is now also possible to read codes that are blurred due to movement or when the depth of focus is limited. Code 128/GS1-128 enjoys widespread use and is often employed in logistics, due to its compact size and great data density.

**Improved usability, faster application development, and more efficient image processing**

Another improved feature has to do with the handling of dictionaries, which can be managed even faster and more easily with HALCON 21.11. The dictionaries can now be used with far fewer operator calls, thus speeding up and simplifying the development process. The same holds for improvements to Generic Shape Matching. Based on customer feedback, the usability was increased, for example by automatically determining many more parameters. This makes the access to MVTec's industry-tested shape matching technologies more user-friendly.

With the HALCON 21.11 release, users of the previous version also benefit from the advantages of Intel's OpenVINO toolkit. The corresponding plug-in which can also be used for other MVTec software products in the future, makes it possible to access AI accelerator hardware that is compatible with the OpenVINO toolkit from Intel. This allows deep learning inference to run much faster on Intel processors, including CPUs, GPUs, and VPUs.

**About MVTec Software GmbH**

MVTec is a leading manufacturer of standard software for machine vision. MVTec products are used in all demanding areas of imaging: semiconductor industry, surface inspection, automatic optical inspection systems, quality control, metrology, as well as medicine and surveillance. By providing modern technologies such as 3D vision, deep learning, and embedded vision, software by MVTec also enables new automation solutions for the Industrial Internet of Things aka Industry 4.0. With locations in Germany, the USA, and China, as well as an established network of international distributors, MVTec is represented in more than 35 countries worldwide. [www.mvtec.de](https://www.mvtec.de/)

**About MVTec HALCON**

MVTec HALCON is the comprehensive standard software for machine vision with an integrated development environment (HDevelop) that is used worldwide. It enables cost savings and improved time to market. HALCON’s flexible architecture facilitates rapid development of any kind of machine vision application. MVTec HALCON provides outstanding performance and a comprehensive support of multi-core platforms, special instruction sets like AVX2 and NEON, as well as GPU acceleration. It serves all industries, with a library used in hundreds of thousands of installations in all areas of imaging like blob analysis, morphology, matching, measuring, and identification. The software provides the latest state-of-the-art machine vision technologies, such as comprehensive 3D vision and deep learning algorithms. The software secures your investment by supporting a wide range of operating systems and providing interfaces to hundreds of industrial cameras and frame grabbers, in particular by supporting standards like GenICam, GigE Vision, and USB3 Vision. By default, MVTec HALCON runs on Arm®-based embedded vision platforms. It can also be ported to various target platforms. Thus, the software is ideally suited for the use within embedded and customized systems. [www.halcon.com](http://www.halcon.com/), [www.embedded-vision-software.com](file:///\\spsc\mvtec\office\pr_marketing\public_relations\press_releases\2021_press_releases\2021.02_pi_vision_china_shanghai\www.embedded-vision-software.com)

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