



# HALCON

a product of MVTec

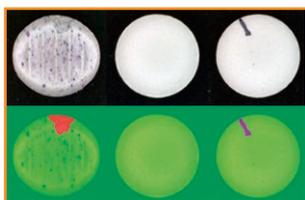


**NEW**  
VERSION  
**18.11**



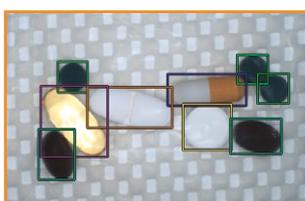
## ■ DEEP LEARNING

The new version 18.11 further expands the deep learning capabilities of HALCON. Even more powerful deep learning algorithms now allow users to locate objects within an image with pixel-precision or bounding box accuracy. There is no need to start from scratch, as our standard machine vision software comes with various pretrained Convolutional Neural Networks (CNNs), that have been highly optimized for industrial applications.



## □ SEMANTIC SEGMENTATION

With HALCON 18.11, object- or error classes trained with deep learning can now be segmented pixel-precisely. Combined with the multitude of possibilities that HALCON offers for further processing extracted regions, this paves the way for an entirely new range of applications, which previously could not be realized, or only with significant programming effort. For example: recognizing objects with a very heterogeneous texture (e.g., plants) or detecting defects on various types of objects and materials, e.g., pills, glass or leather.



## □ OBJECT DETECTION

HALCON 18.11 introduces deep-learning-based object detection, which allows customers to localize trained object- or error classes in an image. In contrast to semantic segmentation, objects are marked by a surrounding rectangle (bounding box). The object detection also separates instances of the same class, even if the objects touch each other or partially overlap. This is especially useful when the exact amount of objects is needed, e.g., when checking pill bags for correct filling.



## ■ HANDLE VARIABLE INSPECT IN HDEVELOP

With HALCON 18.11, HDevelop can display detailed information on most important handle variables. This allows developers to easily inspect the current properties of complex data structures at a glance, which is extremely useful for debugging. Double-clicking a handle variable now returns all parameters associated with the handle and their current settings.



## ■ NEW DATA STRUCTURE – DICTIONARIES

HALCON 18.11 introduces a new data structure, "dictionary", which is an associative array that opens up various new ways to work with complex data. It is possible, for example, to bundle various complex data types (e.g., an image, corresponding ROIs, and parameters) into a single dictionary. This helps to structure programs when, e.g., passing many parameters to a procedure.

Contact your local distributor  
for more information:  
[www.halcon.com/sales](http://www.halcon.com/sales)

# New Version HALCON 18.11

## FURTHER NEW FEATURES

- Reading of ECC200 codes without quiet zone
- UTF-8 support by default
- New standard platform 64-bit Arm®
- Fieldbus integration via Hilscher cifX cards
- Serialization of messages
- Direct query of license status
- Operator interruption
- Various operator speedups