



the Power of Machine Vision

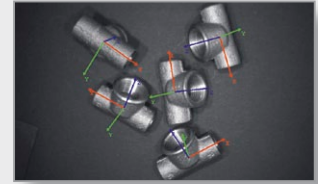


New Version HALCON 10

- **POWERFUL 3D VISION** New surface-based 3D matching, multi-view stereo, 3D primitives fitting
- **FIRST CLASS MATCHING IN ANY DIMENSION** New local deformable matching, faster 3D matching
- **FASTER AND SMARTER** GPU acceleration, extended multi-core usage, reduced need for memory
- **BEST BASIS FOR IDENTIFICATION APPLICATIONS** Smart text finder for OCR, autodiscrimination of bar code types
- **SIMPLY FASTER DEVELOPMENT** New HDevelop measure assistant, new tool for interactive ROI handling
- **... AND MANY MORE**

■ Powerful 3D vision

HALCON offers an outstanding amount of 3D vision methods - making it the only software you need for your application. HALCON 10 further strengthens your 3D vision power with new methods, such as the uniquely robust surface-based 3D matching. Furthermore, HALCON's new multi-view stereo enables you to use an unlimited number of cameras for 3D reconstruction. This compensates occlusions and guarantees robust robotics applications. Moreover, version 10 further improves HALCON's comprehensive calibration technology and introduces multi-view 3D calibration for any number of cameras. Finally, HALCON 10 is able to fit 3D primitives by analyzing 2½ D point clouds.



Multi-view stereo combined with surface-based 3D matching

■ First class matching in any dimension

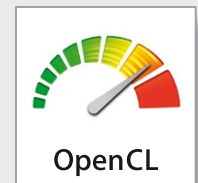
HALCON is already well-known for premium matching technology both for 2D and 3D vision applications. Version 10 now introduces the new local deformable matching to even find objects with surface deformations. HALCON 10 also allows model generation for deformable matching methods from DXF files. Furthermore, HALCON's shape-based 3D matching is considerably faster, and now provides a fast pose refinement.



Local deformable matching

■ Faster and smarter

For highest performance, HALCON 10 provides an efficient automatic GPU acceleration based on the OpenCL standard. More than 50 operators already profit from this feature. In addition to this, HALCON's well-known automatic operator parallelization for multi-core processing has been extended and improved to further speed up the library in general. At the same time, HALCON 10 significantly reduces the main memory needed. To speed up classification applications, HALCON 10 now provides LUT-accelerated classification.



Efficient automatic GPU acceleration

■ Best basis for identification applications

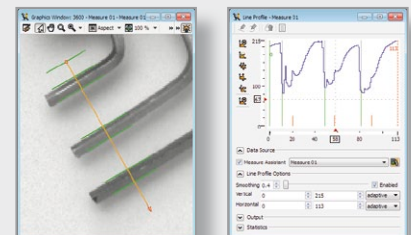
HALCON 10 provides the new smart text finder for robust and easy segmentation in OCR applications. Besides, it contains new and improved pre-trained fonts. For bar code reading, HALCON 10 supports an automatic training mode based on sample images, autodiscrimination of bar code types, and faster reading of composite codes.



Reading different bar codes in one call

■ Simply faster development

The ease of use of HALCON's integrated development environment was further improved. HDevelop now provides a new measure assistant, new tools for interactive ROI handling, for measuring image distances, and for obtaining gray-value profiles along lines and arcs. Developers now may also use global variables in HDevelop programs and can simultaneously open multiple program windows. Also besides HDevelop, HALCON 10 provides many new features for developers, such as new HALCON codelets for 1D measuring and line profiles, and a generic socket communication with external devices and applications.



The HDevelop measure assistant measures distances between edges along a preselected line

Further New Features

- Broad range of new HDevelop application examples
- 3D matching with increased robustness in cluttered images
- New HALCON operators for thread synchronization
- Automatic generation of OCR classifiers from system fonts
- Inverse selection with regular expressions
- Numerous improved image acquisition interfaces
- New "Solution Guide on Matching", covering all 2D and 2½ D matching methods
- Extended "Solution Guide on 3D Vision", now also including depth from focus
- New HDevelop dialog for breakpoint management
- New HDevelop error and warning message console
- Transformation of visualization settings into HDevelop code
- New model image editor in HDevelop Matching Assistant
- Password protection of entire HDevelop programs
- Many additional keyboard shortcuts
- And many, many more ...

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