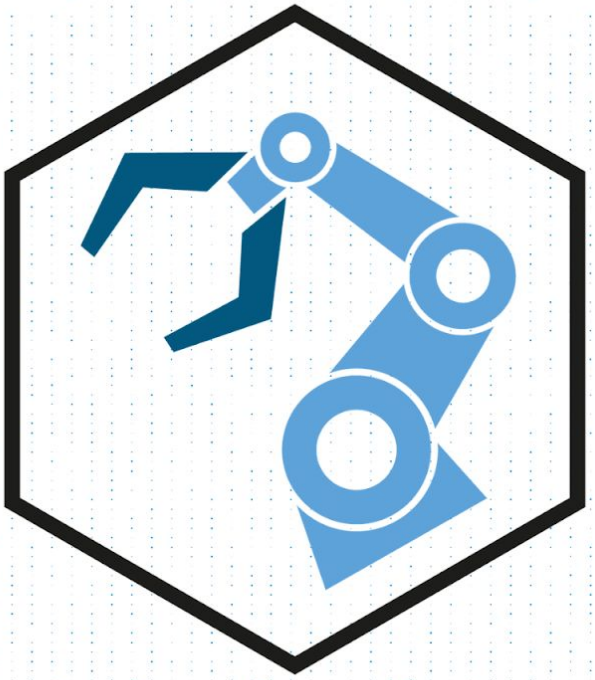
Photoneo



Bin Picking Studio 1.5.0
New features & performance improvements

Release Notes

Speed up

Thanks to the improvements in the localization engine, we reduced the average time of localization by approximately 500 ms. In addition, the path planning performance was increased to save an additional 200 ms minimum per cycle.

PhoXi Control

The new release of Bin Picking Studio comes with a new PhoXi Control 1.2.26. Besides network stability improvements, users can look forward to new, handy features useful in bin picking applications (e.g. new interreflections filter). See the list of changes in the complete release notes.

Localization

Together with the new version of Bin Picking Studio, we also release a new version of Localisation SDK numbered 1.3.3. Besides general stabilization and speed improvements, users can look forward to the following features:

- Empty scene threshold - a new parameter that enables users to define a threshold value for a number of 3D points from the PhoXi scanner. If there are fewer 3D points available, the robot receives this information, which means that the scene is empty. In other words, there are no more objects to be picked.
- Fast scan settings are applied also in the localization GUI during the configuration of the localization profile.

Remote access

The Vision controller is now running a VNC server for simple and effective remote control. Information about the connection to the server is summarized on a new documentation page.

Robot modules

As with each release of BPS, we extended the robot database with new robot models. We added 13 more robots to choose from.
Besides that we:

- Reworked the KUKA module to increase the speed of communication with the Vision controller,
- Extended the support of UR controllers; up to version 5.9.x.x for e-Series and up to version 3.14.x.x for CB-series,
- Added the official support of ABB OmniCore controllers

Last but not least - we announce the official support of Denso robots.

Convenience features

Besides all the features described above, we made a few smart enhancements across the entire system. These include:

- Improved the calibration process in order to perform calibration without any difficulties,
- Implemented automatic detection of incorrect TCP reported by the robotic controller during calibration to prevent incorrect results,
- Tool point definition is now part of each gripper in the gripper database,
- Object gripping points definition was moved to a separate page,
- Environment page and Visualization page are now one single Environment page,
- Collision checking (collision highlighting) is now available also in the joint mode,
- Ability to download the STL of previously uploaded STL objects in the Environment builder
- Each gripping point can have its own thumbnail displayed on the gripping point list to make the orientation easier,
- Numerous GUI improvements,
- Visualizers on the localization page and deployment include a new widget providing information about the last scan properties.

Settings

We enhanced the settings page and improved the UX.
There are also new, handy parameters to make your application more efficient. The first two allow you to define the behavior of a vision system after its initialization by a request from the robot:

- Clear memory on initialization
- Force full scan on initialization

The next two parameters are mainly useful in time-critical applications where the collision-checking performance can be tuned to exchange high precision for extreme speed:

- Resolution of the point cloud volumetric model,
- The minimum required size of a volumetric model segment.

We recognize the need for different settings for each vision system as they can often have special requirements. In this release of Bin Picking Studio, we moved the most crucial parameters from the solution settings to be unique for each vision system:

- Gripper collision sensitivity,
- Fast scan settings.

Furthermore, the fast scan feature has been added with new parameters that allow the user to configure the object localization from a texture image.

Documentation extensions

Documentation updates include:

- A detailed description of the bin picking routine speed customization in bin picking tutorial for each robotic brand,
- New page summarizing the base frame offsets for every supported robot model that requires it,
- Page about the connection to VNC server,
- Tutorial on how to set up the robot in various orientations (upside down, on the sidewall),
- Tutorial for a correct tool point and gripping point setup.