



European Project Semester

PROJECT OUTLINE

Project dates: October 2018- January 2019

Title: Improving Industrial Robotics

Project activity areas: Robotic machining, robotic handling, artificial vision

Keywords: Industrial robots, CAD in robotics, robot programming

Tutor's name and coordinates

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Project origin

End-user: Laboratory of Robotics (Enit)

Overview/Project technical background

The advantages of robotization in both manufacturing times and quality of products explain the choice of many companies for this technique today, and most likely, their number will increase in the near future.

Our recent developments deal with both:

1. Robotic machining especially for the tasks where no high precision is required like polishing or deburring. A grinder is mounted at the flange of the robot, see figure 1,
2. Robotic handling with vision coupling. A robot is equipped with a gripper, see figure 2..

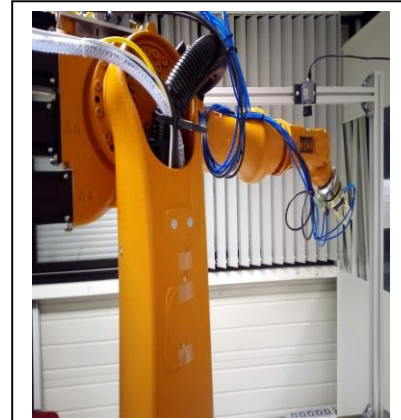


Figure 1: Robotic machining cell (KUKA KR120)

Figure 2: Robotic handling cell (KUKA KR 6)

Studied topics

Subject 1 or Subject 2, listed below, could be chosen according to motivation and skills of the students:

- **Subject 1:** Mechanical design, manufacturing and programming of a new tool holder for the robot KR120, see figure 1. First step will be the tool holder design for a new electrical grinder. Then an off line programming thanks to Delcam software must be achieved. At the same time manufacturing of the tool holder will be launched.
- **Subject 2 :** Robot guidance by vision in handling task, see figure 2. Before the robot KRC 6 grasps objects, recognition will be achieved thanks to the vision system. Off-line simulation will be done using KUKA Simpro software.