

Abstract

The background for the robotic arm is that there are many production lines in the fish industry which are still operated by human operators. The proposed solution to the problem is an autonomous robotic arm which detects, traces and moves the arm to touch a specific target which appears in the arms actionable area. The targets represent stains on fish filets which are currently removed manually. In order to be able to develop the proposed solution, we will need to produce an inverse kinematic model that allows us to map cartesian space into joint space. We will also need a model of the environment which depicts external factors.

In order to be able to produce the system, the following tools are needed: Arduino board, model for the robot, software to produce the simulation environment which also has an integration for Arduino, and a camera to detect points of interest. In addition we will have to use different libraries/APIs in addition to self-produced code to program the functionalities of the robot.

To demonstrate the robot, the aim is to control a down-scaled model of the robotic arm. In addition, there should be a 1:1 relationship between the physical behaviour of the arm and a real time visualization in a simulation environment.