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# **Developing an Integrated System for Automated Picking and Sorting using an ABB Flexpicker Robot**

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requirements of the degree of

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# ABSTRACT

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In the rapid development of flexible automation and the broad application of computer technology, industrial monitor software has played an integral role in all kinds of industrial areas. It allows operators to monitor and control a plant in real-time with feedback from any number of processes. Traditionally industrial monitor software exhibits low efficiency, lack of reliability, non-reconfigurable and does not support multi-communication protocols, as is required for the exchange of data from outside of the factory. (Fan, 2006) Configuration software is basically type of the industrial automation and process monitor and control application. It supports Human Machine Interface (HMI), Supervisory Control and Data Acquisition (SCADA) system, realizes interlink between low level device and upper management network. Nowadays, with the advent of Configuration Software, engineers can readily construct field control systems with minimal developmental time and cost while allowing the combination of a plethora of user requests and control.

The primary objective of this thesis is to develop a web base application with surveillance ability to realize remote control of an ABB IRB 340 Flexpicker robot through Siemens Programmable Logic Controller (PLC) system. The communication between the application and robot system is to be built using configuration software to link a number of third party devices through the inclusion of OLE for Process Control (OPC) techniques, graphical design editors, web navigators, and tag management. The thesis also introduces a vision system with trig-board design for object recognition and tracking.

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