**Project title**
A mechatronic applicator for automated labeling

**Supervisors**
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**Description**
The market demands for automated product labeling are huge and diversified. However, most of the labeling applicators are currently produced for limited types of products in mass production. With the ever increasing needs for different labeling applicators in southern China in particular in the PRD (Pearl River Delta) region, problems arise for the local industry in setting up their integrated production line including labeling (as shown in Fig 1) for varied types of products in an efficient manner to meet the market demands.

![Fig 1 An example of an automated labeling system](image)

This project intends to develop a mechatronic system that can be used for automated labeling with flexibility in allowing for some variations in the target products. This is a company based project. Direct interactions with the local industry are expected during the project. The participant will also have chances to see how Hong Kong companies can do business in the relevant industry. The system to be developed includes a mechanical motion device with its actuator and controller. The project will focus on the practical issues in the applications. With this project, hand-on experiences will be gained in developing and using such a mechatronic system. The participants will also have ample chances to understand a market driven product development approach.

**Category:** Industrial project

**Number of students needed:** 3
Objectives:
The objectives of this project include:
1. To achieve increased quality and production efficiency by developing a robotic label applicator machine system.
2. To enhance the competitiveness of the local industries and enable them to share the market size from other countries by using the developed technology.

Scope of the work:
The project include the following parts of work:
- Mechanical system design and machining.
- Actuator and control system development.
- System integration and testing.

An example of the labeling process by a mass production system is shown in Fig 2. This is a rigid implementation designed for one type of products (small bottles) only. In this project, we will be dealing with some other types of products and using a different implementation.

Fig 2 An example of automated labeling for small bottles