

# 參賽隊伍人員及機器人簡介

## Team Member and Robot Introduction

組 別：遙控組

指導老師：江毅成

學校名稱：中國文化大學  
(School : )

隊伍名：JST  
(Team name : ) JST

### 壹、參賽隊伍人員：

一、指導老師 江毅成

二、組員 廖博名、鍾瑋

1：教師:江毅成

美國德拉瓦大學機械工程博士，目前擔任中國文化大學機械工程學系教授兼系主任，專長領域為固力分析 複合材料 材料工程 應用力學。

Mechanical Engineering, University of Delaware, Ph.D., currently serves as Professor and Chair of the Department of Mechanical Engineering of the Chinese Culture University, and expertise in the field of analysis for solid edge composite materials engineering applied mechanics.

2：學生第一位：廖博名

組長：負責小組工作協調、初步模型設計與製作、小組採購、現場加工、配線、書面報告之設計篇撰文、Solid Edge 繪圖、書面報告之零件/組合圖繪製。

Responsible for team work coordination, preliminary model design and production,

Group procurement, on-site machining, wiring, and a written report design articles author, Solid Edge drawing, writing parts of the report / portfolio mapping.

3:學生第二位：鍾瑋

組員：負責控制機器人、買便當。

Responsible for controlling the robot, buy lunch.

### 貳、機器人簡介

#### 一、構想與策略分析

1. 以走完全程為重，抓娃娃與掛到纜車其次。

(1) 做出基本足部機構。

(2) 能構行走後做出伸降機構。

1 whole journey, grasping doll hanging to the cable car followed.

(1) to make the basic foot institutions.

(2) structure to make walking a stretch lowering mechanism.

#### 二、機構設計

有內外腳共四足，左右兩邊分開驅動，一、機構設計：以籃子作為機身改裝。

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1. 機身: 籃子做加工, 馬達放置上方鐵條處以驅動下方齒輪帶動腳部。
2. 控制盒: 以在網格籃子上加上搖頭開關, 裝上線路。
3. 夾取機構: 用厚紙板改良後夾取娃娃。
4. 升降: 伸上去用鈎的。

Inside and outside the feet of four-legged, separate drive, left and right sides, institutional design:  
basket as body modification.

Body: baskets do processing, motor placed above the iron bars punishable drive below the gear driven foot.

Control box: switch plus shook his head in the mesh basket fitted line.

3. Gripping mechanism: dolls cardboard improvements gripping.

4 lifting: reached up with a hook.

### 三、輪子驅動設計

此次機器人以足形機構並無輪子

### 四、電路設計

回彈式搖頭開關接線路到馬達驅動, 另從搖頭開關接線路至電池, 電池裝置在控制盒上。

The robot foot-shaped bodies, no wheels

Fourth, the circuit design

Rebound Toggle Switch connected lines to the motor drive, another connection line from the Toggle Switch to the battery, the battery unit on the control box.

### 五、感測器設計(遙控組無免填)

### 六、組裝、測試與修改

一、組裝:

1. 以籃子加工用束帶固定馬達、升降和足部機構。
2. 在機身加裝鋁條增加剛性。

First, the Assembly:

1. Basket processing with belted fixed motor, lift and foot institutions.

The installation of aluminum in the fuselage increase rigidity.

Second, the test:

二、測試:

1. 走完全程大約 2 分鐘, 剩餘 2 分鐘則抓取娃娃。
2. 搖晃程度過大, 步行困難。
3. 夾取機構有問題娃娃夾取困難。

The whole journey about two minutes, two minutes remaining to crawl doll.

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Tossing too large and difficult to walk.

Gripping the doll in question gripping difficult.

三、修改：

1. 腳底加菜瓜布增加摩擦力，讓足部不易打滑。

Third, the changes:

1. Foot plus scouring pads increase the friction, so that the foot is not easy to slip.

### 七、機器人創意特色說明

一、特色說明

1. 籃子的機身

(1) 藍子容易加工。

2. 升降機構

(1) 葉片彈簧原理。

I. Features Description

1 basket fuselage

(1) Blue sub easily processed.

2 lifting mechanism

(1) the leaf-spring principle.

### 參、參賽心得

這個比賽讓我學習到了很多，更讓我確定我對機械的喜愛，結果如何並不重要，重要的是我學到了什麼？在這過程中我了解了許多機械原理。

This game so I learned a lot, made me decide I love machinery, the outcome does not matter, the important thing is what I learned? During this process, I learned a lot of mechanical principles.