

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：鍾清枝
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School： Chinese Culture University	Team name：ME1B

壹、參賽隊伍人員：

一、指導老師：鍾清枝，為本組指導老師，在機構設計製作、機電整合、馬達電路控制和機器人機構上的問題，提供建議並指導，給予許多幫助。

二、組長：蔡佳書，為機器操作員，負責小組工作協調、初步模型設計製作、小組採購、現場加工、工作分配、電路焊接、維修與構思比賽策略。

組員：王頌博，為小組總務，負責紀錄工作書報告、練習紀錄表、電路焊接、機器人夾具保養及修復和配置電路。

貳、機器人簡介

一、構想與策略分析

一、構想：使用日常生活用品來製作機器人。

二、策略分析：走完全程為主要目標。

1. 以速度為重，抓娃娃為其次，掛到纜車為參。

(1) 先做出腳步機構，足部可行，再做夾取機構。

(2) 夾取機構可行，才做升降機構。

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二、機構設計

一、機構設計：以菜籃車作為機身改裝。

1. 機身

(1) 把菜籃車底部輪子換成四足機構，馬達放置上方以鏈條驅動下方齒輪帶動腳部。

2. 控制盒

(1) 以在籃子上加上搖頭開關，並鑽洞加上線路。

3. 夾取機構

(1) 以寶特瓶做成的夾具上黏上膠布，以黏取的方式抓娃娃。

三、輪子驅動設計

一、驅動設計：四足機構的行走方式，馬達放置上方帶動下方足部的運動。

四、電路設計

一、電路設計：搖頭開關接線路到馬達驅動。

五、感測器設計(遙控組無免填)

六、組裝、測試與修改

一、組裝：

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1. 以菜籃車上的鐵條用束帶固定馬達、升降和足部機構。
2. 在機身加裝鋁條增加剛性。

二、測試：

1. 走完全程大約 2 分半鐘，剩餘 1 分半鐘則抓取娃娃。
2. 發現兩邊馬達轉速不同，同步困難。
3. 夾取機構無法順利抓取三隻娃娃。

三、修改：

1. 腳底加止滑墊增加摩擦力，讓足部不易打滑。
2. 在馬達上加管子讓兩邊可以同步。

七、機器人創意特色說明

一、特色說明

1. 菜籃車的機身

- (1) 菜籃車機身雖重，但以鐵條作成易於加工為其優點。

2. 升降機構

- (1) 不用可伸縮的機構，另以類似投石機的機構作為替代升降的機構。

參、參賽心得

很高興能參加這類機器人比賽，小時候都是看別人在比，從沒想

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過自己也可以站在這比賽的會場，見識到許多人的創思，也提驗到比賽令人難以喘息的氣氛，這經驗很難得、也極為珍貴。

I: Teams personnel:

First: Instructor 鍾清枝

Secend:Crew 王頌博、蔡佳書

II, robot Profile

1.Vision and strategy analysis

(1).Idea :Use daily necessities to make a robot.

(2).Strategic Analysis : The whole journey as the main target.

2.Mechanism Design

1. Mechanism Design: Basket car as a body modification.

(1). Body : To the basket car at the bottom of wheel replaced by four-legged bodies, motors placed above the bottom of the chain drive gear driven foot.

(2).Control Box : To the basket with toggle switch, and drill holes plus line.

(3).Gripping institutions : fixture made of PET bottles on sticky tape, sticky taken grasping baby

3.Wheel drive design

1.Driven design : the bodies of the four-legged walking motor placed above driven by the bottom of the foot movement

4.Circuit design

1. Circuit Design: Toggle Switch connected lines to the motor drive.

5.Sensor design

6.Assembly, test, and modify

First, the Assembly :

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1. An iron bar with a basket car belted fixed motor, lift and foot institutions.
2. The installation of aluminum in the fuselage increase rigidity.

Second, the test:

1. Way along the road for about 2 and a half minutes remaining minute and a half to crawl doll.
2. Found on both sides of the motor speed, synchronization difficulties.
3. Gripping institutions are unable to successfully crawl three dolls.

Third, the changes:

1. Foot plus non-slip pad to increase friction, so that the foot is not easy to slip.
2. plus motor tube so that both sides can be synchronized.

7. Robot creative Features Description

First. Features Description

1. basket car body:

- (1) basket car body weight, but iron bars made for its advantages of easy processing.

2. lifting mechanism

- (1) do not scalable agencies, as an alternative to other similar institutions trebuchet Lifting bodies.

8. Gained knowledge

Very pleased to participate in this type of robot competitions, a child is to see others than never thought they would be standing in the competition venue, an insight into the creative thinking of many people, breathing the atmosphere of the game is hard to mention experience to this experience is hard to come by, but also extremely valuable.