

## 優秀創新科技及科研作品

### Outstanding Science & Technology Innovation Project

#### 人工智能腳 Artificial Leg

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#### 作品簡介 Project Introduction

該發明品的是希望可以讓那些傷殘而又貧窮的人士享用價廉物美的義肢，這個義肢不但可以做到類似價值港幣過十萬元的電子義肢的功能，而且價錢可以低至大約港幣二千元。正所謂人工智能腳，要做到一隻與真腳相約的義肢就要模仿真腳走路時肌肉收縮放鬆時的狀態，從而用氣動學元件來設計義肢走路時彎曲的動作。

The motion of the Artificial Leg (A.L.) is mainly produced by an air cylinder, an air pump, an electronic valve and simple circuitry. Since the A.L. is semi-automatic while using the A.L. to walk or even climb stairs. Also, the weight of the A.L., which is similar to that of the real leg helps balancing while walking or climbing stairs is significant. Therefore the user may walk or climb stairs comfortably. The Artificial Leg can be adjusted to different sizes according to the size of the thigh of the user. It is only a small fraction of the price of existing automated artificial leg.



#### 主要獎項 Major Awards

- 第 59 屆英特爾國際科學與工程大獎賽 (2006) --- 工程學三等獎 萊特州立大學專項獎  
The 59<sup>th</sup> Intel International Science and Engineering Fair (2006) --- Third Place Grand Award in Engineering and Wright State University Special Scholarship Award
- 第 5 屆全國明天小小科學家獎勵活動(2005)--- 「明天小小科學家稱號」、一等獎  
The 5<sup>th</sup> Future Young Scientist Award Program (2005 ) --- “ Title of Future Young Scientist”and First Place Award
- 第 20 屆全國青少年科技創新大賽(2005) ---科技創新成果(中學) 一等獎 新苗鼓勵獎 為奧運獻禮設計比賽三等獎  
The 20<sup>th</sup> China Adolescent Science and Technology Innovation Contest (2005) --- First Place Award in the category of Physics and Engineering and 5 other special awards
- 第 7 屆香港青少年科技創新大賽(2005) --- 高中工程一等獎  
The 7<sup>th</sup> Hong Kong Youth Science & Technology Innovation Competition (2005)- First Place Award in Engineering (Senior Secondary)