

KineLabs平台 為長者運動及中風復康療程添樂趣

KineLabs for Elderly and Stroke Rehabilitation

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THE HONG KONG
POLYTECHNIC UNIVERSITY

香港理工大學

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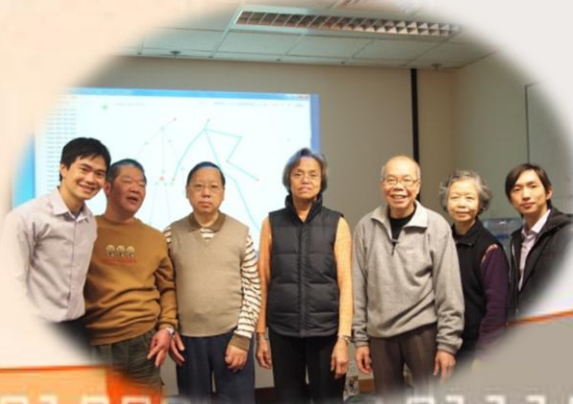
Funding support and Award

- *With the support of the Office of the Government Chief Information Officer (OGCIO) 政府資訊科技總監辦公室, the project initiated by the University's Jockey Club Rehabilitation Engineering Centre was kicked off in 2011 with seed money provided by the "Development of Assistive Technology for Persons with Disabilities Fund" 「無障礙輔助科技研發基金」. (Secretariat Office: iProA 互聯網專業協會)*
- *Silver Award in the Hong Kong ICT Awards 2012: Best Innovation & Research Award (3 Apr 2012)*
(香港資訊及通訊科技獎：最佳創新及研究銀獎)



The Project

- *Funded by the "Development of Assistive Technology for Persons with Disabilities Fund (ATDF)" in 2011*
- *Collaborators include: 腦同盟, 腦友心*
 - *Training with our new Games: 5 stroke subjects + 1 elderly*
 - *Evaluation tools: 12 stroke subjects and 10 normal subjects*
- *Aims at developing a new Kinect-based rehabilitation platform for persons with disabilities after stroke or brain injury for rehabilitation and quality of life*
 1. *Rehabilitation Games (tasks): such as upper limb reach, balance and lower limb exercise.*
 2. *Evaluation Tool: 3D information from the Kinect system could provide additional information for progress on motor functions, such as range of motion, response time, etc.*



On-street Games for Rehabilitation

(12 stroke subjects in our clinical trial)

- *Designed for young, unimpaired person with full body movement availability*
- *Neither systematic training can be provided nor evaluation data can be obtained after the training*



- *Thus, limited the use of the Kinect system by the elderly and persons with motor disabilities, who are **restricted in range of motion, poor response time** and some persons can only play with the game in a **sitting posture***

Stroke Subject Training with our Games

- *The Good View Hunting game (動感抹窗): training task on arm reaching*

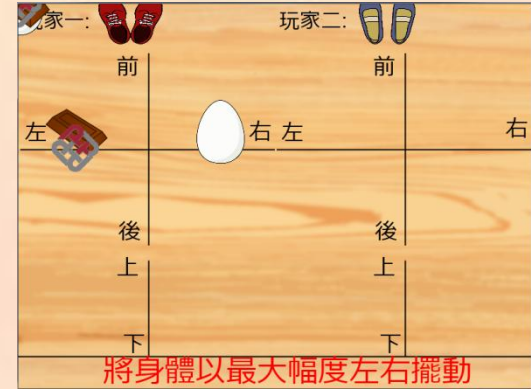
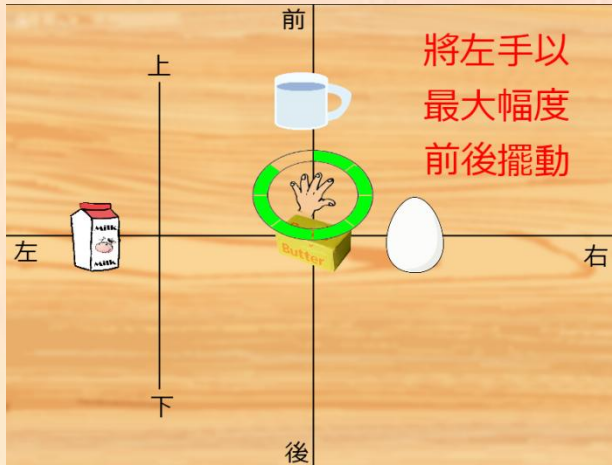


Stroke Subject Training with our Games

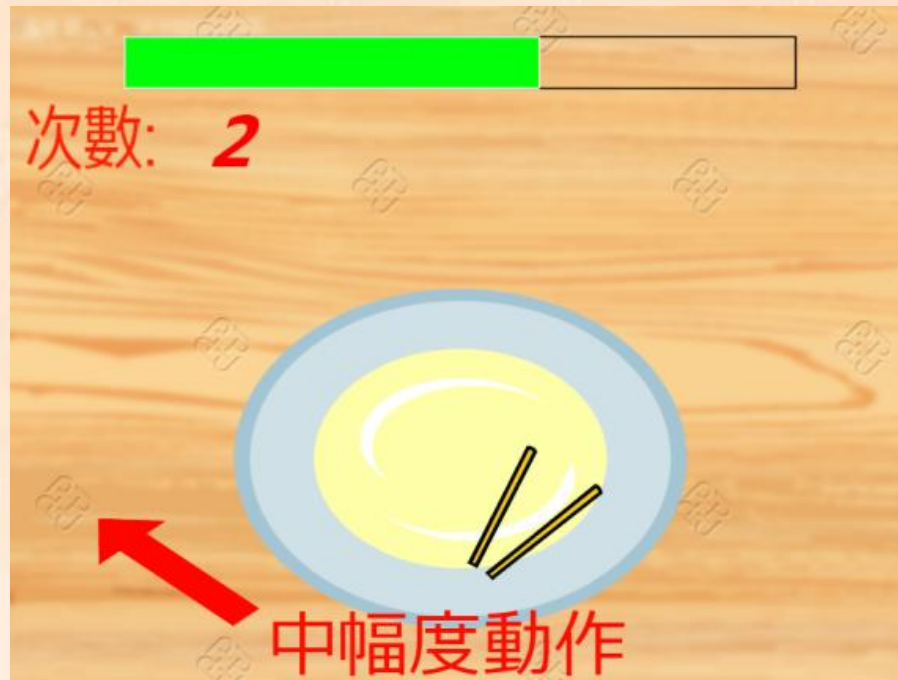
- *The Hong Kong Chef game (動手吧！廚神): training on elbow flexion/extension and shoulder flexion/extension & abduction/adduction*



量度功能 (Calibration)



- *The training has different levels of range of motion during one session.*
- 分別有大幅度、中幅度和小幅度，代表您需要用多大的幅度來玩。



Results for evaluation for users and clinicians

評估報告:雨水

成功比率 平均反應時間

第一次擦拭:	100% 左:50% 右:50%	1.12 秒
第二次擦拭:	100% 左:33% 右:67%	1.86 秒
第三次擦拭:	100% 左:42% 右:58%	2.47 秒

👤 評估報告:黑蟑螂

玩家一:	成功比率	平均反應時間	第一次踩中	玩家二:	成功比率	平均反應時間
	100%	27.28秒	左:0%右:100%		0%	秒
	100%	31.17秒	左:33%右:66%		0%	秒
	100%	34.90秒	左:66%右:33%		0%	秒

第四關總結:

成功比率 平均反應時間

拿材料 **100%** **1662ms**

總次數 每次平均時間

17	882ms
8	1250ms
42	238ms



總得分:2820

白金



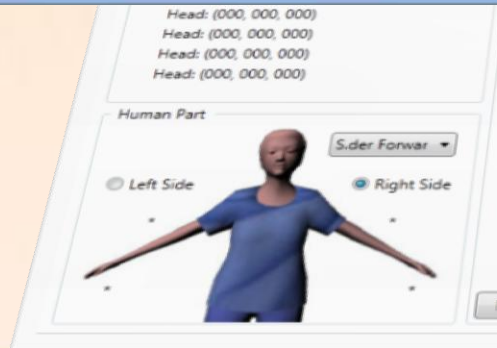
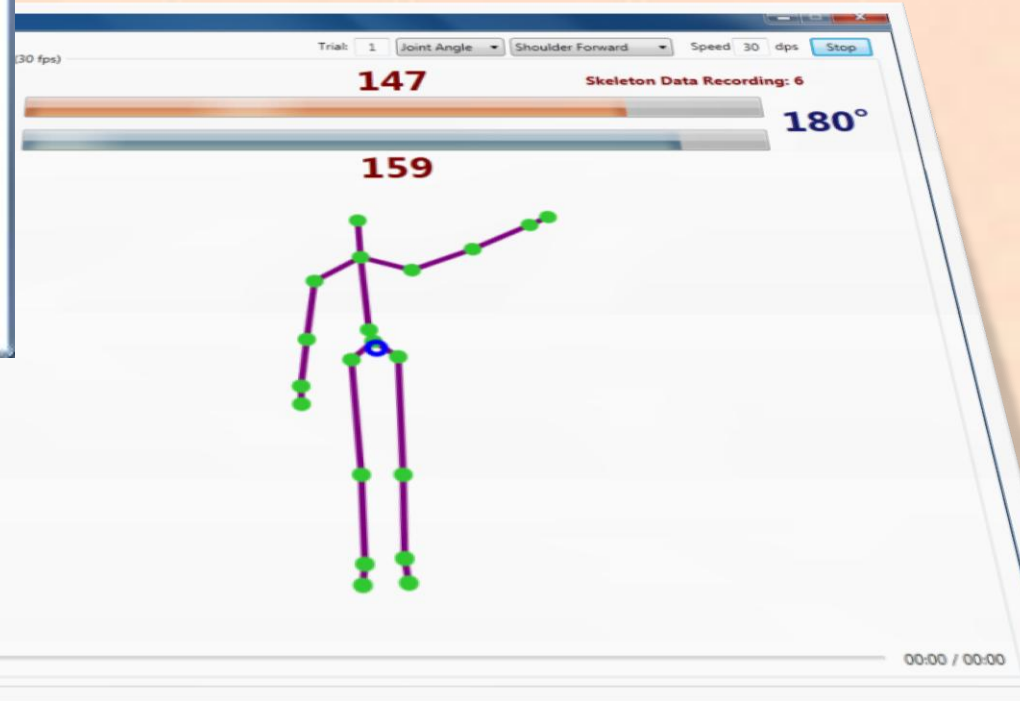
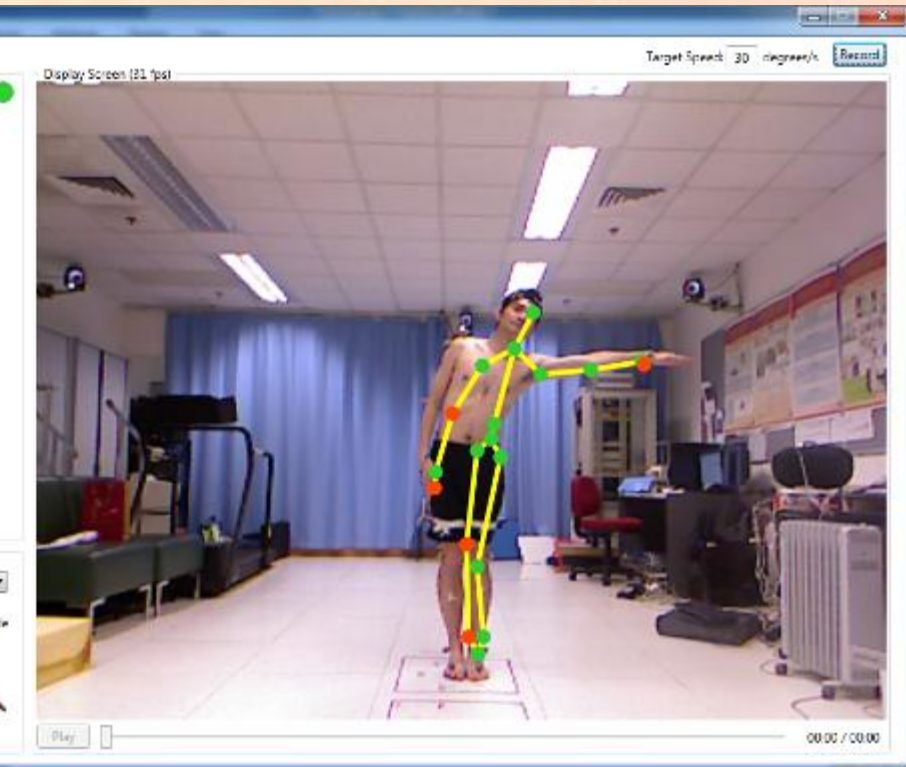
總得分: 0

銅

返回主頁

KineLabs-based Evaluation Platform

平估報告



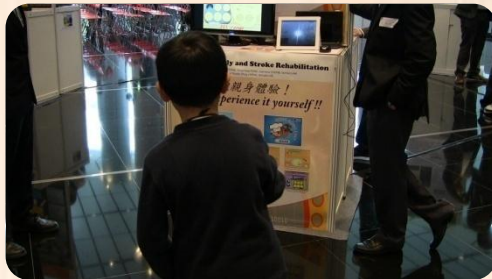
Stroke Subject Training with Evaluation Tool

- *Forward Reaching with Both Affected and Unaffected Arms*



- *Shoulder Range of Motion Evaluation*

Booth with Kids Playing with our Games



Developed Exercise Game

動感抹窗

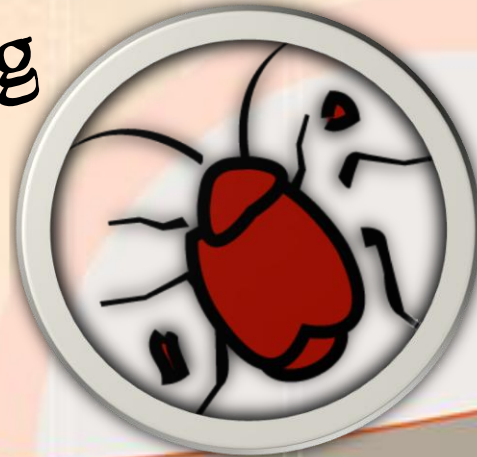


動手吧！廚神！



動腳踩甲由

Good View Hunting



Hong Kong Chef

Cockroach Invasion

- *Our KineLabs Webpage*

The screenshot shows the homepage of the KineLabs project. At the top left is the Polytechnic University of Hong Kong logo and name in English and Chinese. A navigation menu includes Home, Products, Downloads, The Team, and Contact. The main content is divided into two columns. The left column, titled 'What is KineLabs?', features the KineLabs logo and a paragraph describing the project's goal: to exploit the new era of elderly exercise and stroke rehabilitation by integrating rehabilitation and fun. The right column, titled 'Featured Video', shows a video player for 'The KineLabs Project [HD] | Trailer | 5:00'. Below the video is a paragraph stating that the university announced the release of a free software platform called 'KineLabs' with three rehabilitation games. At the bottom, there are logos for the Silver Award and Hong Kong ICT Awards 2012, along with social media icons for Facebook, YouTube, and Twitter.

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— Home — Products — Downloads — The Team — Contact

What is KineLabs?

KineLabs exploit the new era of elderly exercise and stroke rehabilitation. It benefits the elderly and persons with motor disabilities after stroke for rehabilitation and improvement of their quality of life. Integrating rehabilitation and fun together, this project developed the KineLabs platform with three rehabilitation games which are free and offer coordinated upper limb, lower limb and trunk balance training tasks and also support multi-players. Moreover, during the training (game playing), performance data and 3D information of body segments of the players could be captured and further analysed by using our evaluation platform.

Featured Video

The KineLabs Project [HD] | Trailer | 5:00

The KineLabs Project

The Hong Kong Polytechnic University announced the release of a free software platform called "KineLabs" with three rehabilitation games for elderly people and persons after stroke to have fun while

Silver Award
HONG KONG ICT AWARDS 2012

Facebook YouTube Twitter

Game Interface Multi-lingual

(English,

繁體中文,

简体中文,

Deutsch,

日本語, etc)

Youtube Setup Video

English | 粵語

The screenshot shows the KineLabs website interface. At the top left is the logo of The Hong Kong Polytechnic University (香港理工大學). A navigation menu includes Home, Products, Downloads, The Team, and Contact. The main content is divided into two columns. The left column contains 'System Requirements' and 'Software and Sensor Setup' sections. The right column contains 'KineLabs Games (Free)' with a list of games: 'Good View Hunting 動感抹窗 v1.0.3', 'Hong Kong Chef 動手吧! 廚神 v1.0.3', and 'Cockroach Invasion 動腳踩虫甲 v1.0.3'. Each game listing includes language options (English, 繁體中文, 简体中文, 日本語, Deutsch) and a 'NEW' tag, along with a link to the 'User Manual 用戶手冊'. A 'Terms of Use' section is also visible, stating that using the products is subject to the terms of use. At the bottom right, there are social media icons for Facebook, YouTube, and Twitter, along with a 'Silver Award' logo from the 'HONG KONG ICT AWARDS 2012'.



Welcome collaboration and Suggestions!

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