


## 教師個人基本資料

鄭匡佑 

職稱：教授

校內分機：81813

電子郵件：[kybcheng@mail.ncku.edu.tw](mailto:kybcheng@mail.ncku.edu.tw)

到職年月：93 年 8 月

現職年月：97 年 8 月



### 學歷

學校	系所	學位
美國加州大學戴維斯分校	機械航空	博士
美國密西根大學	運動科學與機械	碩士
台灣大學	物理系	學士

### 專長領域

多體動力學、動態模擬與最佳化、運動生物力學、國術、體操 / 標準舞、西洋劍

### 研究方向

Sports biomechanics、multi-body dynamics、control and optimization、physics-based simulation in computer graphics、Martial arts、ballroom dance、fencing

### 所內行政工作

- 體健休所第 11 屆研究生導師 ( 105.08~107.07 )
- 105 學年度本所課程委員會委員、研究規劃委員會委員 ( 105.08.01~106.07.31 )
- 104 學年度本所課程委員會委員 ( 104.08.01~105.07.31 )
- 102 學年度本所課程委員會委員、研究規劃委員會委員 ( 102.08.01~103.07.31 )
- 101 學年度本所課程委員會委員、研究規劃委員會委員 ( 101.08.01~102.07.31 )

- 100 學年度本所 課程委員會委員、研究規劃委員會委員  
( 100.08.01~101.07.31 )
- 99 學年度本所研究規劃委員會委員 ( 99.08.01~100.07.31 )
- 98 學年度本所 課程委員會委員、研究規劃委員會委員  
( 98.08.01~99.07.31 )
- 97 學年度本所 課程委員會委員、研究規劃委員會委員  
( 97.08.01~98.07.31 )
- 96 學年度本所研究規劃委員會委員 ( 96.08.01~97.07.31 )
- 體健休所第 3 屆研究生導師 ( 97.08~99.07 )
- 成大體育學刊執行編輯 ( 95.08~96.07 )

#### 校內行政工作

- 體健休所校務會議代表 ( 2007.02~2008.06 )
- 成大橄欖球校隊教練 ( 2004.09 )
- 成大西洋擊劍社、武術社指導老師兼教練；建中北一女校友會、中友會指導老師 ( 2006.08 )
- Committee Member, International Academic Exchange Program. (2008.09)
- Committee Member, International Affairs Committee, NCKU. (2010.08)

#### 校外行政工作

- Main Secretariat for the International Symposium on Computer Simulation in Biomechanics (ISCSB11) (2006.09~2007.06)
- 台灣生物力學學會研發快訊執行編輯 ( 2008.02 )
- 體委會奧運黃金計畫運動科學委員 ( 2006.02~2006.12 )
- Committee Chair, Physical Education Activity Committee. (2010.08)
- Committee Chair, Taiwan Society of Biomechanics in Sports. (2009.11~2011.11)
- Non-Governmental Organization (NGO), College Students Career Development Organization, Taipei, Taiwan. (2010.09)
- Non-Governmental Organization (NGO), Yantra Yoga, Taipei. (2008.12)

#### 榮譽

- 2007 獲選參加 " 龍匯 100 —華人青年領袖論壇 " 赴香港及河南與當地政界學界代表交流會談
- 2006 第二屆台灣武術文化節全國國術錦標賽社男推手第二量級亞軍
- 2006 雲林科技大學國際標準舞營拉丁三項全能冠軍 (12/09)
- 2006 救國團全國大專國際標準舞研習營拉丁舞競賽第五名 (8/18)
- 2005 Investigator's Merit Award at the 2nd Asian Pacific Conference Biomechanics

- 2004 首屆亞太地區生物力學學會 年輕科學家獎
- 2003 加州大學戴維斯校區出席國際會議獎
- 2003 Conference Travel Award, Taipei Economic Cultural Office in San Francisco 中華民國留學生參與國際會議獎
- 2002 全美大專杯武術競賽傳統北拳第三名
- 2001 加州 Master Cup 體操競賽成人組全能亞軍
- 2000 美西大學體操社交流賽地板動作第五名
- 2000 加州大學海外華人學生歌唱比賽亞軍
- 1999 加州大專杯擊劍競賽新生鈍劍亞軍
- 1997 教育部公費留學獎學金得主 ( 運動教練科學學門 )

### 證照

- B 級國際標準舞教練
- 中華台灣國術會丙級太極拳教練證
- 初級體適能指導員證書
- 中華台灣國術會丙級太極拳裁判證
- 中華民國擊劍協會教練證

### 期刊論文

1. Kuangyou B. Cheng, Ying-Hsun Wang, Shih-Yu Kuo, Kuan-Mao Wang, Yi-Chang Huang (2014). Perform kicking with or without jumping: differences in coordination between Taekwondo back kicks and jumping back kicks. . Accepted by Journal of Sports Sciences (SCI 2013 Sport Sciences 21/81, impact factor 2.095)
2. Kuangyou B. Cheng, Yi-Chang Huang, Shih-Yu Kuo (2014). Effect of arm swing on single-step balance recovery. Accepted (13 Aug 2014) by Human Movement Science (SCI 2013 Sport Sciences 22/81, impact factor 2.027; SSCI 2013 Psychology, Experimental 33/83)
3. Hsin-Shih Lin, Tsang-Hai Huang, Ho-Seng Wang, Shih-Wei Mao, Yuh-Shiou Tai, Hung-Ta Chiu, Kuang-You B. Cheng and Rong-Sen Yang (2013). Short-Term Free-Fall Landing Causes Reduced Bone Size and Bending Energy in Femora of Growing Rats. Journal of Sports Science and Medicine 12, 1-9. (SCI 2012 Sport Sciences 55/84, impact factor 0.953)
4. Sung, Y-H, Cheng, K.B., Cheng, K.Y., Chen, Y-R (2011). 新傳媒時代下的快速走紅現象分析,中大管理研究 6, 132-145.
5. Hsin-Shih Lin, Tsang-Hai Huang, Shih-Wei Mao, Yuh-Shiou Tai, Hung-Ta Chiu, Kuang-You B. Cheng, Rong-Sen Yang (2011). A short-term free-fall landing enhances bone formation and bone material properties. Journal of Mechanics in Medicine and Biology ,11(5), 1125–1139. (SCI 2010 Engineering Biomedical 59/70, impact factor 0.493)

6. Chen, H-C, Cheng, K.B., Liu, Y-J, Chiu, H-T, Cheng, K-Y (2010). The Defence Technique of Tai Chi Push Hands – A Case Study. *Journal of Sports Sciences*, 28: 14, 1595-1604. (SCI 2010 Sport Sciences 31/80, impact factor 1.870)
7. Hirokazu KIUCHI, Motomu NAKASHIMA, Kuangyou B. CHENG, Mont HUBBARD (2010). Modeling Fluid Forces in the Dive Start of Competitive Swimming, *Journal of Biomechanical Science and Engineering* 5, 314-328.
8. Chiu, H.T., Wang, C.H. and Cheng, K.B. (2010) The three-dimensional kinematics of a barbell during the snatch of Taiwanese weightlifters. *Journal of Strength and Conditioning Research*, 24(6), 1520-1526. (SCI 2010 Sport Sciences 33/80, impact factor 1.848)
9. Yao-Yang Tsai, Wen-Chieh Lin, Kuangyou B. Cheng, Jehsee Lee, Tong-Yee Lee (2010). Real-time Physics-based 3D Biped Character Animation Using an Inverted Pendulum Model. *IEEE Transactions on Visualization and Computer Graphics*, 16(2), 325-337. (SCI/EI **COMPUTER SCIENCE, SOFTWARE ENGINEERING** 12/99, impact factor 1.922)
10. Cheng, K.B. (2008). The relationship between joint strength and standing vertical jump performance. *Journal of Applied Biomechanics* 24, 224-233. (SCI 2008 Sport Sciences 37/71 ; *Engineering Biomedical* 29/52, impact factor 1.197)
11. Cheng, K.B., Wang, C.H., Chen, H.C., Wu, C.D, and Chiu, H.T. (2008). The mechanisms that enable arm motion to enhance vertical jump performance—A simulation study. *Journal of Biomechanics* 41 (9), 1847-54. (SCI 2008 *Engineering Biomedical* 9/52, impact factor 2.784)
12. Cheng, K.B. and Hubbard, M. (2008). Role of arms in somersaulting from compliant surfaces: a simulation study of springboard standing dives. *Human Movement Science* 27, 80-95. (SCI 2008 Sport Sciences 21/71, *SSCI Psychology experimental* 30/71, impact factor 1.725)
13. Hubbard, M. and Cheng, K.B. (2007). Optimal discus trajectories. *Journal of Biomechanics* 40, 3650-3659. (SCI 2007 *Engineering Biomedical* 6/44, impact factor 2.897)
14. 鄭匡佑(2005)。太極拳之生物力學相關研究近況。成體大體育 38(2), 14-17。
15. 鄭匡佑(2005)。電腦模擬在運動生物力學的應用。科學月刊 36 (3), 236-239。
16. Cheng, K.B. and Chen, W.C. (2005). Optimal standing long jumping simulation from different starting postures. *Journal of Mechanics in Medicine and Biology* 5, 203-215. (SCI)
17. Cheng, K.B. and Hubbard, M. (2005) Optimal compliant-surface jumping: a multi-segment model of springboard standing jumps. *Journal of Biomechanics* 38, 1822-1829. (SCI 2007 *Engineering Biomedical* 6/44, impact factor 2.897)
18. 鄭匡佑(2004)。探討人體動作之新觀點—動態系統。成體大體育 37(4), 8-13。
19. Cheng, K.B. and Hubbard, M. (2004). Optimal jumping strategies from compliant surfaces- a simple model of springboard standing jumps. *Human Movement Science* 23, 35-48. (SCI 2007 Sport Sciences 35/72, *SSCI Psychology* 46/60, impact factor 1.252)

## 研討會

1. 黃一展、葉士逢、鄭匡佑 ( 2013 )。上肢參與跨步恢復平衡動作之生物力學特性分析。十六屆中國運動生物力學交流大會論文集。

2. Shih-Yu Kuo, Kuangyou B. Cheng, Hung-Ta Chiu, Yi-Chang Huang, Kuan-Mao Wang (2013). Differences in Baseball Batting Movement Strategies between Facing a Pitcher and Pitching Machine. The XXIV Congress of the International Society of Biomechanics, Natal, Brazil.
3. Kuangyou B. Cheng, Shih-Yu Kuo, and Kuan-Mao Wang 2012. SIMULATION OF WHOLE-BODY FAST REACHING MOVEMENTS. 30th International Conference on Biomechanics in Sports
4. 郭時聿、鄭匡佑。快速跨步動作之最佳化電腦模擬。2011 台灣運動生物力學學會年會論文集
5. Ying-Xun Wang, Shih-Yu Kuo, Yi-chang Huang, Ling-Hua Wang, Kuangyou B. Wang (2011). INVESTIGATION OF THE SUPPORTING LEG KINEMATICS IN THE ROUNDHOUSE KICK OF TAEKWONDO. 2011 國際生物力學研討會暨台灣生物力學學會年會論文集。
6. Cheng, K.B., Lee, J.C., Kuo, S.Y. (2011). Inadequacy of model simplification in complex movement simulations. Proceedings of the XXI Congress of International Society of Biomechanics (ISB 2011).
7. Wang, Y.X., Kuo, S.Y., Wang, L.H., Cheng, K.B. (2011). KINEMATIC ANALYSIS OF THE SUPPORTING LEG BETWEEN DIFFERENT WEIGHT DIVISIONS IN THE ROUNDHOUSE KICK OF TAEKWONDO. International Symposium on Biomechanics in Sports (ISBS2011), 423-425. (Full paper)
8. Chen, H.C., Kuo, S.Y., Cheng, K.B. (2011). Biomechanical analysis of the evading with pushing technique in Tai Chi push hands. International Symposium on Biomechanics in Sports (ISBS2011), 167-170. (Full paper)
9. Chen, Y-R, Cheng, K.B., Sung, Y-H, Cheng, K.Y., (2010). 金融風暴下新傳媒時代的爆紅秘訣. 第十三屆兩岸中華文化與經營管理學術研討會論文集. (Full paper)
10. 王啟綱、王盈勳、郭時聿、鄭匡佑 ( 2010 ) 。快速伸手觸及目標全身動作之策略與生物力學特性。2010 台灣生物力學學會及台灣運動生物力學學會聯合年會暨學術研討會論文集(Full paper)
11. Chi-Kang Wang, Kuangyou B. Cheng, & Yung-Hsien Huang (2010). BIOMECHANICAL CHARACTERISTICS OF WHOLE-BODY FAST REACHING MOVEMENTS. International Symposium on Biomechanics in Sports (ISBS2010). (Full paper)
12. 鄭匡佑、周學雯、蔡馨梅、Kuang-Yu Cheng ( 2009 ) 。個人成長課程經營型態之探討。第十二屆兩岸中華文化與經營管理學術研討會論文集。(Full paper)
13. Hui-Chieh Chen, Chih-Ying Yu, and Kuangyou B. Cheng (2009). COMPUTER SIMULATION OF THE OPTIMAL VAULTING MOTION DURING THE HORSE (TABLE) CONTACT PHASE. International Symposium on Biomechanics in Sports (ISBS2009). (Full paper)
14. Chen, H.C. and Cheng, K.B. (2008). Biomechanical Analysis of the Attack Techniques in Tai Chi Push Hands. International Symposium on Biomechanics in Sports (ISBS2008). (Full paper)

15. Cheng, K.B. and Chen, H.C. (2008). Biomechanical Analysis of the Defense Techniques in Tai Chi Push Hands. International Symposium on Biomechanics in Sports (ISBS2008). (Full paper)
16. Jheng-Chi Lee, Kuangyou B. Cheng (2008). EFFECT OF SHOULDER STRENGTH ON THE FLIGHT DISTANCE IN THE STANDING LONG JUMP. International Symposium on Biomechanics in Sports (ISBS2008). (Full paper)
17. Hui-Chieh Chen, Hui-Chuan Chen, and Kuangyou B. Cheng (2008). HOW DOES ARM MOTION ENHANCE VERTICAL JUMP PERFORMANCE- A SIMULATION STUDY. International Symposium on Biomechanics in Sports (ISBS2008). (Full paper)
18. Yao-Yang Tsai, Hung-Kuo Chu, Kuangyou B. Cheng, Tong-Yee Lee (2007). Animation generation and retargeting based on physics characteristics. Proceedings of IEEE the third International Conference on Intelligent Information Hiding and Multimedia Signal Processing (Special Session on Computer Graphics), 349-352. (Full paper) (EI)
19. Chiu, H.T., Cheng, K.B., and Wang C.H. (2007). The 3-D kinematics of the barbell during the snatch movement for elite Taiwan weightlifters. In: The Impact of Technology on Sport II, Eds: F.K. Fuss, A. Subic, and S. Ujihashi, 655-660. (Full paper) (Presented at the 3rd Asia-Pacific Congress on Sports Technology, APCST 2007)
20. Chen, H.C. and Cheng, K.B. (2007). Effect of joint strengthening on vertical jumping performance. In: The Impact of Technology on Sport II, Eds: F.K. Fuss, A. Subic, and S. Ujihashi, 613-618. (Full paper) (Presented at the 3rd Asia-Pacific Congress on Sports Technology, APCST 2007)
21. Cheng, K.B. and Chiu, H.H. (2007). Simulation of the swim grab start. In: Proceedings of the 11<sup>th</sup> International Symposium on Computer Simulation in Biomechanics (ISCSB 2007).
22. Cheng, K.B. and Chen, H.C. (2007). DEVELOPMENT OF A SIMULATION MODEL FOR THE SNATCH WEIGHT-LIFT. Journal of Biomechanics 40 (supplement 2), S323. (Presented at the XXI Congress of International Society of Biomechanics, ISB 2007).
23. Cheng, K.B. and Chen, H.C. (2006). Effect of wind speed on shot put throws. In: Proceedings of 2006 Conference of Taiwan Society of Biomechanics, 13.
24. Cheng, K.B., Chang, G.L., and Chen, W.C. (2005). The role of arm motion in generating angular momentum for springboard somersaults. In: Proceedings of the 2nd Asian Pacific Conference on Biomechanics (APB 2005).
25. Cheng, K.B. and Hubbard, M. (2005). Differences between jumping and somersaulting from a diving springboard: a simulation study. In: Proceedings of XXIII International Symposium on Biomechanics in Sports (ISBS 2005), 949-952. (Full paper)
26. Chiu, H.D. and Cheng, K.B. (2004). The role of insole in the cushioning property of sports shoes. In: Proceedings of the 12th Conference of Taiwan Society of Biomechanics.
27. Cheng, K.B. and W.C. Chen (2004). The influence of arm swing strength on the standing long jump performance. In: Proceedings of the 12th Conference of Taiwan Society of Biomechanics.
28. Cheng, K.B. and Hubbard, M. (2004). Optimal jumping strategies from compliant surfaces: a 2-dimensional model of springboard standing dive jumps. In: The Engineering of Sport 5 (vol. 2), 361-367. (Full paper)

29. Cheng, K.B. and Hubbard, M. (2004). Optimal simulation of the standing long jump with arm swing. In: Proceedings of the First Asian Pacific Conference on Biomechanics, 205-206.
30. Cheng, K.B. and W.C. Chen (2003). Optimal standing long jumping simulation from different starting postures. In: Proceedings of the 13th International Conference on Mechanics on Medicine and Biology (ICMMB-13), 75-76.
31. Cheng, K.B. and Hubbard, M. (2003), Simulation of optimal vertical jumps, in Sports Dynamics, Eds: A. Subic and F. Alam, 229-234. (Full paper)

## 研究計畫

- 2016/08/01~2017/07/31 網球拍擊球碰撞模擬與最佳化設計。( \$711,000)
- 2015 以電子感應之格鬥運動引導電玩愛好者參與實際運動。( \$284,500)
- 2015 應用神經生物力學及最佳化動作模擬探討人體平衡恢復動作機制 ( 修訂版 )。( \$614,000)
- 2012/08/01~2015/06/30 恢復平衡最佳協調動作之模擬運算 ( 修訂版 )。( \$1,128,000)
- 2011/08/01~2012/09/30 電子審判技術於中華武術之應用與推廣。( \$458,000)
- 2010/08/01~2011/10/31 以電腦模擬探討快速觸及目標物之全身動作控制模式。( \$479,000)
- 2009/08/01~2010/10/31 全身性快速伸手觸及目標動作之生物力學特性。( \$904,000)
- 2007/08/01~2008/10/31 以電腦模擬幫助體操跳馬技術之提升(I)。( \$543,000)
- 2007/08/01~2009/10/31 應用物理與生物特性之動畫合成及動作轉移。( \$1,102,000)
- 2006/08/01~2007/10/31 太極拳推手之力學原理。( \$711,000)
- 2005/01/01~2005/08/31 從彈性表面產生最多向後翻騰次數之跳躍模擬。( \$146,900)

## 學生指導

### 一、已畢業—碩士班：

1. 97 級；陳慧娟；太極拳推手中攻與防之生物力學原理
2. 97 級；陳暉傑；跳馬動作之最佳化電腦模擬
3. 98 級；李政騏；手持重物立定跳遠之最佳化電腦模擬
4. 99 級；王啓綱；全身性快速伸手觸及目標動作之生物力學特性
5. 100 級；陳琬茹；長期練習瑜珈的中年女性其平衡能力之探討
6. 101 級；郭時聿；棒球打者面對投手與發球機時打擊動作策略之差異
7. 101 級；王盈勛；跆拳道後踢與跳後踢之運動生物力學特性比較

8. 102 級；黃一展；上肢參與跨步恢復平衡動作之生物力學特性分析
9. 102 級；王冠賢；上肢影響恢復平衡動作之生物力學分析
10. 102 級；丁銘傑；
11. 105 級；許育傑；網球拍之震動模擬與最佳化設計
12. 106 級；歐昱呈；支撐腳位置對於踢球表現之影響
13. 106 級；葉 磊；於運動中的假動作偵測：以籃球切入為例
14. 107 級；鄞世榮；以有限元素模型與力學實驗探討羽球拍拍床之力學行為
15. 108 級；李文傑；使用虛擬實境頭戴式裝置進行預期及非預期性足球切入動作之膝關節生物力學分析
16. 108 級；李道明；棒球飛行軌跡之電腦模擬
17. 109 級；林禎祥；虛擬實境結合數學模型探討籃球跳投中有效之欺瞞動作
18. 110 級；鍾武岳；胸椎活動度訓練對棒球打者軀體扭轉角度與打擊表現之影響
19. 110 級；劉彥伯；棒球投擲動作肌肉貢獻度模擬
20. 111 級；葉家琳；不同運動貼紮對女性運動員高臺落地動作中膝關節生物力學與跳躍表現之影響
21. 111 級；駱哲宇；瑜珈訓練對投手腕關節活動度及球速之影響
22. 112 級；杜韋葶；以足底壓力分佈探討運動鞋舒適度最佳值
23. 112 級；陳方遠；動態貼布肩關節貼紮對棒球球速與上肢生物力學之影響
24. 112 級；黃俊銘；基於影像辨識的國標舞同步舞評分輔助系統
25. 113 級；盧偉承；棒球投球軸心腳膝關節運動對軸心腳初期動力學與骨盆旋轉之影響
26. 114 級；林嘉樂；應用電腦視覺姿態估計於健美比賽評判輔助

## 二、已畢業—碩士在職專班：

1. 110 級；宮西婉婷；應用慣性感測元件探討高爾夫揮桿精準度與一致性之影響

## 三、在學中：

1. 112 級；王○晟(碩專)
2. 114 級；林○亦

3. 114 級 ; 陳○蓉(碩專)
4. 114 級 ; 程○芸(碩專)
5. 115 級 ; 林○杰
6. 115 級 ; 歐○辰
7. 116 級 ; 黃○漢
8. 116 級 ; 簡○芯