教師簡介 Profile

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主要學歷 Educations	大同大學電機工程博士 大同工學院電機工程碩士 大同工學院電機工程學士
學界經歷 Experiences of academy	中國文化大學機械系專任教授(2013/2-迄今) 中國文化大學機械系數位機電碩士班所長(2015/8-2017/7) 中國文化大學機械系專任副教授(2008/8-2013/1) 台北城市科技大學電子系專任副教授(2005/8-2008/7) 光武技術學院電子系專任講師(1992/8-2005/7)
業界經歷 Experiences of industry	大同公司電子設計處工程師(1987/6-1992/7)
研究領域 Research interests	自動化與智慧型控制(Automatic and Intelligent Control) 嵌入式微控制器應用（Applications of Embedded Microcontroller) 機電系統整合(Mechatronic System) 機器人控制(Robot Control)
教學課程 Teaching courses	機電系統整合 (Mechatronic System)
	嵌入式微控制器之應用(Applications of Embedded Microcontroller)
	機器人互動設計(Robot Interaction Design)
	應用電子學(Applied Electronics)
	程式設計(Program Design)
	電工實驗(Electrical Engineering Lab.)

研究計畫 (Research projects)

國科會(科技部)/教育部 專題研究計畫案

17	MOST 111-2221-E-034-006 - 計畫主持人：蘇國和	輔以深度 6DoF 姿態估測器之身心狀態辨識技術在雙足陪伴機器人之實現 執行期限： 111/08/01 ～ 112/07/31
16	MOST 110-2221-E-034-015 - 計畫主持人：蘇國和	情緒辨識系統之開發及其在互動式機器人之應用 執行期限： 110/08/01 ～ 111/07/31
15	PSK1090334	體驗學習法在機器人控制實務教學之實踐計畫

	計畫主持人：蘇國和	執行期限： 109/08/01 ～ 110/07/31
14	MOST 108-2622-E-034-001-CC3 計畫主持人：蘇國和	以類神經網路實現寵物機器人之互動設計 執行期限： 108/06/01 ～ 109/11/30
13	MOST 107-2622-E-034-002-CC3 計畫主持人：蘇國和	多台搬運機器人路徑導引系統之實現及其在智慧工廠之應用 執行期限： 107/06/01 ～ 108/05/31
12	MOST 106-2221-E-034-001– 計畫主持人：蘇國和	以循環式類神經網路為基礎之身心狀態評估系統開發 執行期限： 106/08/01 ～ 107/07/31
11	MOST 106-2622-E-034-004-CC3 計畫主持人：蘇國和	以雲端結合樹梅派為基礎之無人搬運機器人之夾爪與導引系統開發 執行期限： 106/06/01 ～ 107/05/31
10	MOST 105-2221-E-034-012– 計畫主持人：蘇國和	以類神經網路為基礎之仿生夾爪設計及其在寵物機器人之應用 執行期限： 105/08/01 ～ 106/07/31
9	MOST 104-2221-E-034-007- 計畫主持人：蘇國和	磁浮避震模糊系統之建立及其在足型機器人避震系統之實現 執行期限： 104/08/01 ～ 105/07/31
8	MOST 103-2221-E-034-017- 計畫主持人：蘇國和	磁浮避震器設計及其在往復式足型機器人避震系統之實現 執行期限： 103/08/01 ～ 104/07/31
7	NSC 102-2221-E-034 -005- 計畫主持人：蘇國和	往復式足型機器人導航系統與仿生夾爪開發 執行期限： 102/08/01 ～ 103/07/31
6	NSC 101-2221-E-034-007- 計畫主持人：蘇國和	往復式足型探勘機器人之開發 執行期限： 101/08/01 ～ 102/07/31
5	NSC 100-2221-E-034-004- 計畫主持人：蘇國和	以輪式探測機器人為基礎的環境探測系統 執行期限： 100/08/01 ～ 101/07/31
4	NSC 99-2221-E-034-015- 計畫主持人：蘇國和	以輪式探測機器人為基礎的環境探測系統 執行期限： 99/08/01 ～ 100/07/31
3	NSC 99-2221-E-034 -013 – 共同主持人：蘇國和	電腦視覺應用於微孔陣列位置度誤差與微鑽針製程刀具壽命之研究 執行期限： 99/08/01 ～ 100/07/31
2	NSC 97-2221-E-034 -018 - 計畫主持人：蘇國和	具有類神經觀測器之兩輪獨立驅動載具之研製 執行期限： 97/08/01 ～ 98/07/31
1	NSC 95 - 2221-E-149-019- 計畫主持人：蘇國和	坡度式基因演算法於伺服驅動系統之設計與應用 執行期限： 95/08/01 ～ 96/07/31

科技部 大專生專題計畫案

1	101 年度大專生參與國科會專題研究計畫，NSC 101-2815-C-034-032-E，中國文化大學，智慧型兩輪自走車平衡控制器之研製，專題學生：李佳駿，指導教授：蘇國和。

產學合作計畫案

6	108 年度 柯達科技實業有限公司產學合作計畫：以類神經網路實現寵物機器人之互動設計 (MOST 108-2622-E-034-001 -CC3)，計畫主持人：蘇國和，2019/06/01 – 2020/11/30。
5	107 年度 柯達科技實業有限公司產學合作計畫：多台搬運機器人路徑導引系統之實現及其在智慧工廠之應用 (MOST 107-2622-E-034-002 -CC3)，計畫主持人：蘇國和，2018/06/01 – 2019/05/31。
4	106 年度 柯達科技實業有限公司產學合作計畫：以雲端結合樹梅派為基礎之無人搬運機器人之夾爪與導引系統開發 (MOST 106-2622-E-034-004 -CC3)，計畫主持人：蘇國和，2017/06/01

	– 2018/05/31。
3	97 年度 北台灣科技學院 創益科技顧問股份有限公司 產學合作計畫，台北捷運月台鐵軌障礙物偵測 (TSINT-96-ELE-S2)，計畫主持人：蘇國和，2008/03/01 – 2009/02/28。
2	94 年度 北台灣科技學院 群能科技有限公司產學合作計畫，多功能環境監控系統開發與製作 (NTIST-94-ELE-08)，計畫主持人：蘇國和，2006/04/01 - 2006/12/31。
1	92 年度 北台灣科技學院 冠魁電機股份有限公司，單晶片語音播報及顯示系統 (NTIST-92-ELE-04)，計畫主持人：蘇國和，2003/02/01 - 2006/07/31。

研究著作 (Publications)

一、期刊論文

[18] **Kuo-Ho Su**, Chung-Hsien Kuo, Che-Wei Hsu, "Implementation of biped robot with smart vision and gait controller," *iRobotics*, vol.5, no.1, pp. 1-6, May 2022.

[17] **Kuo-Ho Su,** Chung-Hsien Kuo, "Implementation of smart vision-based handling gripper," *iRobotics*, vol.3, no.1, pp. 18-23, March 2020.

[16] **Kuo-Ho Su,** Syuan-Jie Huang, Chan-Yun Yang , "Development of robotic grasping gripper based on smart fuzzy controller," *International Journal of Fuzzy Systems*, vol.17, no.4, pp. 595-608, Dec. 2015. (**SCI**)

[15] **Kuo-Ho Su**, "A roll-motion control system for a mobile wheeled platform: a preliminary test platform for roll-motion control of ships," *Journal of Vibration and Control*, vol. 21, no.14, pp. 2796–2812, Oct. 2015. (**SCI**)

[14] **Kuo-Ho Su**, Feng-Li Lian, Chan-Yun Yang, "Development of vision-based navigation system for wheeled agent," *Asian Journal of Control*, vol. 16, no.3, pp. 778-794, May 2014. (**SCI**)

[13] **Kuo-Ho Su**, "Robust tracking control design and its application to balance a two-wheeled robot steering on a bumpy road," *Journal of Systems and Control Engineering, Proceedings of the Institution of Mechanical Engineers, Part I,* vol. 226, no.7, pp. 887-903, Aug. 2012. **(SCI)**

[12] **Kuo-Ho Su**, "Active fin control for ship stabilization system using heuristic genetic optimization," *Journal of Systems and Control Engineering, Proceedings of the Institution of Mechanical Engineer, Part I,* vol. 226, no.5, pp. 665-677, May 2012. **(SCI)**

[11] Dar-Yuan Chang, **Kuo-Ho Su** and Chyn-Shu Deng, "Tool wear in a ceramic microdrilling processing using image processing methods**,**" *Advanced Materials Research*, vol. 579, pp. 227-234, 2012. **(EI)**

[10] **Kuo-Ho Su**, "Fuzzy model identification with enhanced validity criterion for mechanical system design," *Journal of Mechanical Design*, vol. 133, no.10, pp. 1045011-1045017*,* Nov. 2011. **(SCI)**

[9] **Kuo-Ho Su** and Feng-Hsiang Hsiao, "Design of GA-based control for electrical servo drive**,**" *Advanced Materials Research*, Vol. 201-203, pp. 2375-2378, 2011. (**EI**)

[8] **Kuo-Ho Su**, Yih-Young Chen and Shun-Feng Su, "Design of neural-fuzzy-based controller for two autonomously driven wheeled robot**,**" *Neurocomputing*, Vol. 73, No. 13-15, pp. 2478-2488, Aug. 2010. (**SCI**)

[7] **Kuo-Ho Su** and Tzu-Hsiung Chen, "Adaptive fuzzy tension control system for winding process of the film materials," *Chinese Journal of Electron Devices*, Vol. 31, No. 1, pp. 220-224, Feb. 2008. (**EI**)

[6] Rong-Jong Wai and **Kuo-Ho Su**, "Adaptive enhanced fuzzy sliding-mode control for electrical servo drive," *IEEE Transactions on Industrial Electronics*, Vol. 53, No. 2, pp. 569-580, April 2006. (**SCI**).

[5] Rong-Jong Wai and **Kuo-Ho Su**, "Supervisory Control for Linear Piezoelectric Ceramic Motor Drive Using Genetic Algorithm**,**" *IEEE Transactions on Industrial Electronics*, Vol. 53, No. 2, pp. 657-673, April 2006. (**SCI**).

[4] Chung-Chun Kung and **Kuo-Ho Su**, "Supervisory grey-based tracking control for nonlinear dynamical system," *Journal of Systems and Control Engineering, Proceedings of the Institution of Mechanical Engineers,* Vol. 220, No. 1, Part I, pp. 41-52, January 2006. (**SCI**).

[3] **Kuo-Ho Su** and Chung-Chun Kung, "Supervisory enhanced genetic algorithm controller design and its application to decoupling induction motor drive," *IEE Proc. Electr. Power Appl.*, Vol. 152, No. 4, pp. 1015-1026, July 2005. (**SCI**)

[2] Chung-Chun Kung and **Kuo-Ho Su**, "Robust position control of perturbed electrical servo drive system via adaptive fuzzy sliding-mode technique," *Journal of Systems and Control Engineering, Proceedings of the Institution of Mechanical Engineers,* Vol. 219, Part I, pp. 145-160, April 2005. **(SCI)**

[1] Chung-Chun Kung and **Kuo-Ho Su**, "Adaptive fuzzy position control for electrical servo drive via total sliding-mode technique," *IEE Proc.,Electr. Power Appl.*, Vol. 152, No. 6, pp. 1489-1502, November 2005. **(SCI)**

二、國內期刊論文

[5] **蘇國和**, 張峻銘, "以 Zigbee 為基礎之無線圖控系統之實現," *華岡工程學報,* vol. 29, pp. 145-150, June 2012.

[4] **Kuo-Ho Su** and Jiun-Ming Jang, "Implementation of home monitor system using wireless sensor network," *Hwa Kang Journal of Engineering Chinese Culture University,* Vol. 26, pp. 59-66, June 2010.

[3] **K. H. Su** and Yao-Sheng Tsao, "Tension control system for the winding process of film materials," *Hwa Kang Journal of Engineering Chinese Culture University,* Vol. 24, pp. 85-93, June. 2009.

[2] **K. H. Su** and T. Y. Chiang, "Design and implementation of two-wheeled intelligent robot," *Hwa Kang Journal of Engineering Chinese Culture University,* Vol. 23, pp. 113- 118, Jan. 2009.

[1] **Kuo-Ho Su** and Chung-Chun Kung, "Uncertainty-prediction-based controller for PM synchronous motor drives," *Kuang Wu Journal*, Vol.26, pp. 369-378, March 2003.

三、研討會論文

[64] **Kuo Ho Su**, Che-Wei Hsu, "Implementation of smart biped robot," 2022 Int. Conf. on System Science and Engineering 2022 (ICSSE2022), Taichung, Taiwan, May 26 - 29, 2022.

[63] **蘇國和**，馮雅棠，"情緒辨識系統之開發及其在互動式機器人之應用," 2022 Artificial Intelligence Technology and Application (AITA2022)，台中，台灣， 5 月 20 日，2022。

[62] **蘇國和**，周庭宇，"具追隨與模糊平衡控制之雙足機器人，"Proceedings of 2022 National Symposium on System Science and Engineering (NSSSE2022)，台中，台灣， 5 月 26-29 日，2022。

[61] **蘇國和**, 林宣宏, 許哲維, "體驗學習法在機器人控制實務教學之實踐計畫，"2021 教學創新示範國際研討會，5 月 28/29 日，2021，台灣。

[60] **Kuo-Ho Su**, Jui-Chen Wu, Te-Chang Sung, "A smart face recognition system for companion robot," 2020 Int. Conf. on System Science and Engineering 2020 (ICSSE 2020), Kagawa, Japan and Taipei, Taiwan, Aug. 31 – Sept. 3, 2020.

[59] **Kuo-Ho Su**, Jui-Chen Wu, Te-Chang Sung, "Application of smart face recognition on companion robot," 8th Int. Conf. on Advanced Robotics and Intelligent Systems (ARIS 2020), Taipei, Taiwan, Aug. 19-21, 2020.

[58] 吳睿宸, 蘇國和, 宋德震, "輕巧型臉部辨識系統之開發與應用," Proceedings of 2020 National Symposium on System Science and Engineering (NSSSE 2020), Taichung, Taiwan, May 22-23, 2020.

[57] **Kuo-Ho Su**, Te-Chang Sung, Jui-Chen Wu, Tang-Xuan Ou, and Zhuo-Lun Zhang, "Development of navigation system for automatic guided vehicles," 16th Int. Conf. on Automation Technology (Automation 2019), Taipei, Taiwan, Nov. 22-24, 2019.

[56] **Kuo-Ho Su**, Jui-Chen Wu, Tang-Xuan Ou, Zhuo-Lun Zhang, "Image-based path planning for wheeled mobile robot," 2019 Int. Automatic Control Conf. (CACS 2019), Keelung, Taiwan, Nov. 13-16, 2019.

[55] Jui-Chen Wu, **Kuo-Ho Su**, Te-Chang Sung, "Implementation of Voronoi-based path planning for automatic guided vehicle," 2019 Int. Conf. on Fuzzy Theory and Its Application (iFUZZY2019), New Taipei City, Taiwan, Nov. 7-10, 2019.

[54] 蘇國和, 吳睿宸, "無人搬運車行進路徑規畫及其實現," 2019 National Conference on Advanced Robotics, Taipei, Taiwan, Aug. 20-23, 2019.

[53] **Kuo Ho Su**, Yuan Hong Zhong, "Design and implementation of smart physical and mental state assessment system," 2019 Int. Conf. on Smart Science (ICSS 2019), Gunma, Japan, March 30 - April 2, 2019.

[52] **Kuo-Ho Su**, Yuan-Hong Zhong, "Development of smart physical and mental state assessment system," 2018 Int. Automatic Control Conf. (CACS 2018), Taoyuan City, Taiwan, Nov 4-7, 2018.

[51] **Kuo-Ho Su**, Yuan-Hong Zhong, "Design of handling gripper and its application to smart pet robot," IEEE 2018 Int. Conf. on Machine Learning and Cybernetics (ICMLC2018), Chengdu, China, Jul. 2018.

[50] **Kuo-Ho Su**, Yuan-Hong Zhong, "Design and implementation of neural-network-based bionic handling gripper," 2018 Int. Conference on Snart Science (ICSS2018), Kyoto, Japan, Apr. 2018.

[49] **Kuo-Ho Su**, Chung-Hsien Kuo, Yuan-Hong Zhong, "Image-based neural network controller for robotic gripper," 2018 IEEE Int. Conf. on System Science & Engineering (ICSSE2017)), New Taipei City, Taiwan, Jul. 2018.

[48] 林睿宇, 蘇國和, "以樹梅派為基礎的圖像辨識及其在機器人之應用," 2018 National Symposium on System Science and Engineering (NSSSE2018), New Taipei City, Taiwan, Jul. 2018.

[47] **Kuo-Ho Su**, Yu-Chieh Wang, "Electric vehicle collision avoidance system using backpropagation fuzzy controller," 2017 Int. Conf. on Fuzzy Theory and Its Application (iFUZZY2017), Pingtung, Taiwan, Nov. 13-15, 2017.

[46] **Kuo-Ho Su**, Tan-Feng Lee, Hao-Yu Liao, "Pattern recognition based on heuristic neural network," 2017 Int. Conf. on System Science and Engineering (ICSSE2017), Ho Chi Minh City, Vietnam, July 21-27, 2017.

[45] 蘇國和, 鐘元宏, "影像辨識及其在機器人夾爪之應用," 2017 National Conference on Advanced Robotics, Taipei, Taiwan, Sep. 6-8, 2017.

[44] 蘇國和, 黃聖翔, "以基因演算法為基礎的 TSK 模糊控制器於寵物機器人之即時追蹤," Proceedings of 2017 National Symposium On System Science and Engineering (NSSSE2017), Taipei, Taiwan, May 19-20, 2017.

[43] **Kuo-Ho Su**, Sheng-Siang Huang, "Development of hybrid intelligent maglev suspension system," 2016 Int. Conf. on Fuzzy Theory and Its Application (iFUZZY2016), Taichung, Taiwan, Nov. 9-11,

2016.

[42] **Kuo-Ho Su**, Chun-Yi Li, "Supervisory fuzzy model control for magnetic levitation system," 13th IEEE Int. Conf. on Networking, Sensing and Control (ICNSC2016), Mexcico City, Mexcico, Apr. 28-30, 2016.

[41] **Kuo-Ho Su**, Wei-Hung Pan, "Design of adaptive fuzzy magnetic suspension vibrator for foot robot," 2015 Int. Conf. on Fuzzy Theory and Its Application (iFUZZY2015), pp. 369-374, Yilan, Taiwan, Nov. 18-20, 2015.

[40] **Kuo-Ho Su**, Duy-Thanh Pham, Tsing-Tshih Tsung, Chan-Yun Yang, "Fuzzy model control for maglev suspension system," 2015 Int. Conf. on System Science and Engineering (ICSSE2015), Morioka, Japan, July 6-8 2015.

[39] 蘇國和,黃瑄傑,龔宗鈞,蘇順豐,"以模糊控制器為基礎的夾爪設計與實現," Proceedings of 2015 National Symp. on System Science and Engineering (NSSSE2015), Taipei, Taiwan, July 17-18, 2015.

[38] **Kuo-Ho Su**, Tun-Hua Chang, Shun-Feng Su, "Design of fuzzy-based magnetic suspension vibrator for electric wheelchair," 12th IEEE Int. Conf. on Networking, Sensing and Control ICNSC2015), Taipei, Taiwan, Apr. 9-11 2015.

[37] **Kuo-Ho Su**, Syuan-Jie Huang, Chan-Yun Yang, "Implementation of robotic gripper based on pressure module and smart fuzzy controller," 2014 Int. Conf. on Fuzzy Theory and Its Application (2014 iFUZZY), Kaohsiung, Taiwan, Nov. 26-28, 2014.

[36] Chan-Yun Yang, Yi-Hong Tu, **Kuo-Ho Su**, Wei-Che Yu, "Dynamic path planning under randomly distributed obstacle environment," 2014 Int. Automatic Control Conf. (CACS2014), Kaohsiung, Taiwan, Nov. 26-28, 2014.

[35] **Kuo-Ho Su**, "Development of navigation system and bionic handling gripper for reciprocating-foot robot," 國科會控制學門成果發表 (NSC102-2221-E-034-005-), Kaohsiung, Taiwan, Nov. 26-28, 2014.

[34] **Kuo-Ho Su**, Tan-Phat Phan, Chan-Yun Yang, Wen-June Wang, "Image-based smooth path planning for wheeled robot," 11th IEEE Int. Conf. on Control and Automation (ICCA2014), pp. 203-207, Taichung, Taiwan, June 18-20, 2014.

[33] **Kuo-Ho Su**, Tan-Phat Phan, "Robot path planning and smoothing based on fuzzy inference," 2014 IEEE Int. Conf. on System Science and Engineering (ICSSE2014), pp. 64-68, Shanghai, China, July 11-13, 2014.

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[31] 蘇國和, 許睿尹,"以影像為基礎之輪型機器人追蹤控制,"2014 台灣智慧型機器人研討會, P. 24, 台北, 台灣, 2014 年 6 月 6-8 日。

[30] 蘇國和, 林謙,"輪型機器人之模糊目標追蹤控制,"2014 台灣智慧型機器人研討會, P. 25, 台北, 台灣, 2014 年 6 月 6-8 日。

[29] **Kuo-Ho Su**, Chen Lin, "Tracking control of nonlinear dynamical system via supervisory state feedback technique," 2014 Int. Conf. on Complex Medical Engineering (ICME 2014), pp. 118, Taipei, Taiwan, June 26-29, 2014.

[28] **Kuo-Ho Su**, "Anti-rolling fin control for ship stabilization,"2013 CACS Int. Automatic Control Conference , Sun Moon Lake, Nantou, Taiwan, Dec. 2-4, 2013.

[27] **Kuo-Ho Su**, "Development of a reciprocating-foot robot for environment exploration," 國科會控制學門成果發表 (NSC101-2221-E-034-007-), Nantou, Taiwan, Dec. 2-4, 2013.

[26] **Kuo-Ho Su**, Tsung-Hsien Lu, "Development of robust tracking controller for wheeled robot," 2013 Int. Conf. on Advanced Robotics and Intelligent Systems (ARIS2013), pp. 76-79, Tainan, Taiwan, May 31 - June 2, 2013.

[25] Chan-Yun Yang, Gene Eu Jan, **Kuo-Ho Su**, "Admissibility of fuzzy support vector machine through loss function," 2013 IEEE Int. Conf. on System Science and Engineering (ICSSE2013), pp. 75-80, Budapest, Hungary, July 4-6, 2013.

[24] **Kuo-Ho Su**, Minh-Hoang To, Chan-Yun Yang, "Robust tracking controller design and its application to wheeled robot," 2013 IEEE Int. Conf. on System Science and Engineering (ICSSE2013), pp. 263-268, Budapest, Hungary, July 4-6, 2013.

[23] **Kuo-Ho Su**, Feng-Li Lian and Chan-Yun Yang, "Navigation design with SVM path planning and fuzzy-based path tracking for wheeled agent," Proc. of 2012 Int. Conf. on Fuzzy Theory and Its Application (iFUZZY2012), Taichung, Taiwan, Nov. 2012.

[22] **Kuo-Ho Su**, "Wheeled-exploring-robot based environmental monitor system," 國科會控制學門成果發表 (NSC 100-2221-E-034-004-), Yunlin, Taiwan, Nov. 2012.

[21] **Kuo-Ho Su**, "Adaptive fuzzy balance controller for two-wheeled robot," 2012 IEEE Int. Conf. System Science and Engineering (ICSSE2012), pp. 30-33, Dalian, China, July 2012.

[20] 趙胤登, **蘇國和**, "影像辨識在輪型機器人之應用," 2012 機電整合科技研討會, pp. 116-120, Taipei, June 2012.

[19] **蘇國和**, 王柏棋, "啟發式類神經網路在圖樣識別之應用," 2012 數位與科技生活創新應用學術研討會, pp. 102-105, Chungli, Taiwan, June 2012.

[18] **Kuo-Ho Su**, "Wheeled-exploring-robot based environmental monitor system," 國科會控制學門成果發表 (NSC 99-2221-E-034-015-), Taichung, Nov. 2011.

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