



計算機組

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研究領域：行動通訊服務系統設計、綠色與橘色科技整合

關鍵字：異質網路、行動通訊服務

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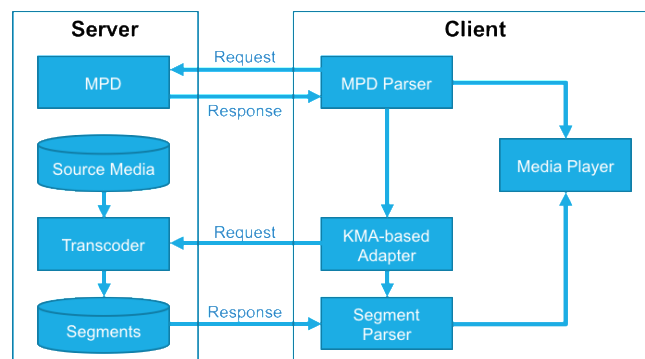
一、研究主題與目標

- 行動通訊服務系統設計:探討行動通訊服務及系統架構設計時的問題
- 跨領域整合:探討綠色與橘色科技之整合

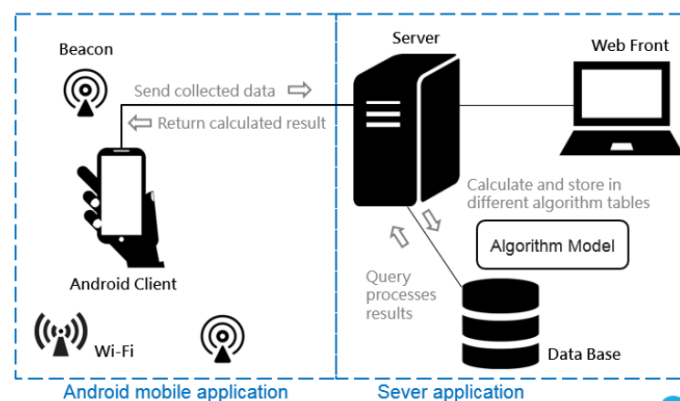
二、最近研究題目

(a) 行動通訊服務系統設計:

由於無線通訊技術的進展，在後語音服務時代，繼之而起的行動服務逐漸受到注意。典型的無線行動服務主要包含三部分:服務、使用者端設備及網路。於異質網路上建置行動寬頻服務，可能會面對服務流程多樣性的問題，於是我們著力於研究探討在設計服務及架構時，所可能面臨的問題。



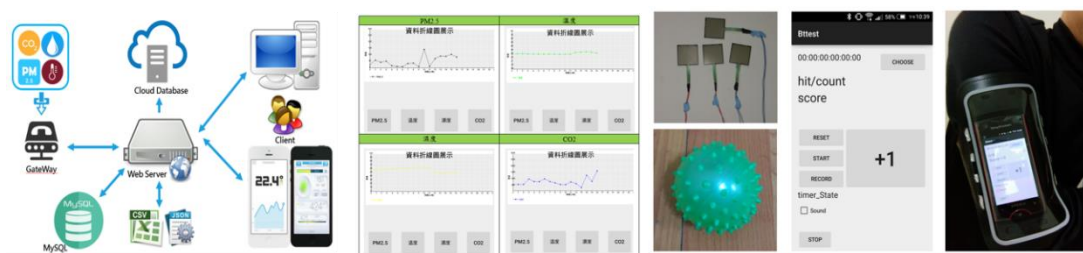
圖一 行動服務架構(以基於核心移動平均法的 DASH 服務為例)



圖二 室內定位系統

(b) 跨領域整合(特別是設計應用於橘色科技):

如何讓年長者自在地享受資訊時代的生活成為一項重要的議題。基於人道關懷，我們著手以先進的感測與通訊技術提升年長者居家的生活品質。



圖三 居家照護系統整合



圖四 智慧輔具設計

三、主要的研究成果與所執行的計劃(2011-2016)

A. Journal Papers (Selected)

- 1) Jenq-Shiou Leu, Min-Chieh Yu, Hung-Jie Tzeng, "Improving Indoor Positioning Precision by Using Received Signal Strength Fingerprint and Footprint Based on Weighted Ambient Wi-Fi Signals," Computer Networks, Vol. 91, pp. 329-340, Nov. 2015 [SCI,EI] (IF(2014): 1.256, COMPUTER SCIENCE, HARDWARE & ARCHITECTURE (18/50))
- 2) Jenq-Shiou Leu, Jheng-Huei Chen, and Kuen-Han Li, "Hybrid Search Scheme for Social Networks Supported by Dynamic Weighted Distributed Label Clustering," IEEE Transactions on Computers, Vol. 64, No. 9, pp. 2586-2594, Sep. 2015 [SCI,EI] (IF(2014): 1.659, COMPUTER SCIENCE, HARDWARE & ARCHITECTURE (10/50))
- 3) Jenq-Shiou Leu, Tung-Hung Chiang, Min-Chieh Yu, and Kwan-Wu Su, "Energy Efficient Clustering Scheme for Wireless Sensor Networks with Isolated Nodes," IEEE Communications Letters, Vol. 19, Issue 2, pp. 259-262, Feb. 2015 [SCI,EI] (IF(2014):1.268, TELECOMMUNICATIONS(31/77))
- 4) Jenq-Shiou Leu, Chi-Feng Chen, and Kun-Che Hsu, "Improving Heterogeneous SOA-based IoT Message Stability by Shortest Processing Time Scheduling," IEEE Transactions on Services Computing, Vol. 7, No. 4, pp. 575-585, Oct. 2014 [SCI,EI] (IF(2014): 3.049, COMPUTER SCIENCE, SOFTWARE ENGINEERING (3/104))
- 5) Jenq-Shiou Leu, Nguyen Hai Tung, and Chun-Yao Liu, "Non-parametric RSS Prediction Based Energy Saving Scheme for Moving Smartphones," IEEE Transactions on Computers, Vol. 63, Issue 7, pp. 1793-1801, Jul. 2014 [SCI,EI] (IF(2013): 1.473, COMPUTER SCIENCE, HARDWARE &

ARCHITECTURE (15/50))

- 6) Mu-Sheng Lin, Jenq-Shiou Leu, Kuen-Han Li, and Jean-Lien Chen Wu, "TABOA: Terrain-Aware Beacon Order Adaptation Scheme in 3D Zigbee Sensor Networks," IEEE Wireless Communications, Vol. 20, Issue 2, pp. 28-36, Apr. 2013 [SCI,EI] (IF(2012): 3.740, TELECOMMUNICATIONS (2/77)) (NSC- 100-2221-E-011-154-)
- 7) Min-Chieh Yu, Jenq-Shiou Leu, "Kernel Weighted Scheme for Improving Mobile Sensor Node Connectivity," IEEE Sensors Journal, Vol. 13, No. 4, pp. 1200-1206, Apr. 2013 [SCI,EI] (IF(2012): 1.475, INSTRUMENTS & INSTRUMENTATION (20/57)) (NSC- 101-2221-E-011-126-)
- 8) Jenq-Shiou Leu, Chuan-Ken Lin, "On Utilization Efficiency of Backbone Bandwidth for a Heterogeneous Wireless Network Operator," ACM/Springer Wireless Networks (WINET), Vol.17, No.7, pp. 1595-1604, Oct. 2011 [SCI,EI] (IF(2011): 0.520, TELECOMMUNICATIONS (56/79))

B. Conference Papers(Selected)

- 1) M.-Y. Wu, M.-C. Yu, J.-S. Leu, and S.-K. Chen, "Improving Security and Privacy of Images on Cloud Storage by Histogram Shifting and Secret Sharing," The 83th IEEE Vehicular Technology Conference (IEEE VTC 2016 Spring), Nanjing, China, May 15–18, 2016
- 2) T.-H. Chiang and J.-S. Leu, "Regional Energy Aware Clustering with Isolated Nodes in Wireless Sensor Networks," 2014 IEEE 25th International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC 2014), pp. 1829-1833, Washington DC, USA, Sep. 2-5, 2014.
- 3) J.-S. Leu, C.-T. Chen and T.-H. Chiang, "Prolonging WSN Lifetime with Data-Location Similarity and Weakest Node Protection," The 79th IEEE Vehicular Technology Conference (IEEE VTC 2014 Spring), pp. 1-5, Seoul, Korea, May 18-21, 2014
- 4) W.-B. Hsieh and J.-S. Leu, "A Dynamic Identity User Authentication Scheme in Wireless Sensor Networks," 9th IEEE International Wireless Communications and Mobile Computing Conference (IEEE IWCMC 2013), pp. 1132-1137, Cagliari, Sardinia, Italy, Jul. 1-5, 2013.
- 5) J.-S. Leu, K.-W. Su, T.-Y. Chu, C.-H. Hsieh, Y.-S. A. Chen, and J. P. Ma, "Pointer Wizard - A Remote Interaction User Interface," The 11th ACM Annual International Conference on Mobile Systems, Applications, and Services (ACM MobiSys 2013), pp. 477-478, Taipei, Taiwan, Jun. 25-28 2013.
- 6) J.-S. Leu and H.-J. Tzeng, "Received Signal Strength Fingerprint and Footprint Assisted Indoor Positioning Based on Ambient Wi-Fi Signals," The 75th IEEE Vehicular Technology Conference (IEEE VTC 2012 Spring), Yokohama, Japan, May 6-9, 2012.
- 7) M.-C. Yu and J.-S. Leu, "Adaptive Weighted Scheme for Improving Mobile Sensor Node Connectivity in the IEEE 802.15.4 Network," the 13th IEEE/IFIP Network Operations and Management Symposium (IEEE/IFIP NOMS 2012), pp. 968-973, Maui, Hawaii, USA, Apr. 16-20, 2012.

C. Projects

- 1) 睡眠醫學穿戴式用藥管理雲平台之開發與臨床驗證(2/3)(共同主持人)(105-3011-E-038-001-)

- 2) 利用串流分析、實物認證與多媒體物聯網建構互動式家庭關懷平台(105-2221-E-011-084-MY3)
- 3) [臺北醫學大學暨國立臺灣科技大學學術合作專題研究計畫]失眠患者之睡前準備穿戴式雲平台系統開發與驗證
- 4) [東京工業大學暨國立臺灣科技大學學術合作專題研究計畫] 利用 Hadoop 平台收集、處理與分析來自以人為本物聯網設備的大量數據之研究
- 5) 銀髮族居家智慧輔具系統的整合設計與實作(104-2218-E-011 -016 -)
- 6) 透過 OTT 網路服務平台的多媒體安全傳遞機制之研究(104-2221-E-011-018-)
- 7) 室內商場定位導覽系統開發[台灣之星電信股份有限公司]
- 8) Linux Optimization for HW Diagnostic FW[香港商凌拓科技股份有限公司台灣分公司]
- 9) Fast Duplicated Files Finder[威聯通科技股份有限公司]
- 10) 基於雲端儲存裝置服務平台之應用程式開發計畫[威聯通科技股份有限公司]
- 11) 人本中心情境感知計算系統之研究設計與開發(103-2221-E-011-112-)
- 12) 愛的天使:守護你所關心的人(103-2218-E-011 -005-)
- 13) 智慧型手機上具自我學習能力之能耗控管模型之研究(102-2221-E-011-068-)
- 14) 隨意點精靈- 年長者為中心的非接觸通訊人機介面(101-2218-E-011-039)
- 15) 在異質點對點網路中以網路編碼進行檔案分享及行動節點的能耗問題之研究(101-2221-E-011-126-)