

# Curriculum Vitae

## Personal Data

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## Educational Background

1986-1990          Doctor of Philosophy In Electrical Engineering  
Illinois Institute of Technology , Chicago, U.S.A.

## Career Experiences

08/2016- PRESENT    Vice Superintendent , Department of Healthcare Administration  
and Medical Information, Kaohsiung Medical University

08/2015- PRESENT    Professor, Department of Healthcare Administration and Medical  
Information, Kaohsiung Medical University

04/2014- PRESENT    Professor, Institute of Biomedical Informatics (former Institute of Health  
Informatics and Decision Making), NYMU

02/2016-07/2016    Consultant ,Kaohsiung Medical University Chung-Ho Memorial  
Hospital

2015-2015          Professor, Department of Public Health , Kaohsiung Medical University

1995-2014          Associate Professor, Institute of Biomedical Informatics (former Institute  
of Health Informatics and Decision Making), NYMU

2006-2008          Center Director, Information and Communication Center, NYMU

2005-2008          Chief Information Officer, Taipei City Hospital

2003-2004          Director, Computer Center, Chi Mei Medical Center

2002-2003          Chairman, Institute of Health Informatics and Decision Making, NYMU

1995-2000          Center Director, Information and Communication Center, NYMU

## Research Projects

Title of Project	Project period	Funding Agency	Role in Project	Funding (NT\$)
Facilitating Nursing Guideline Revision base on Evidence Based Medicine Using Nursing Care Data Repository	08/2015-03/2017	Ministry of <b>Science</b> and Technolog	PI	762,000
Field verification for integrated Post-acute Care service	03/2016-12/2016	Industrial Technology Research Institute.	PI	950,000
具標準性之臨床知識建模工具設計	07/2016-12/2016	Industrial Technology Research Institute.	PI	600,000
Designing a user-experience based clinical trial research system model	08/2014-07/2015	Ministry of <b>Science</b> and Technolog	PI	589,000
Developing clinical data repository conforming to standard ontologies – SNOMED CT	08/2013-07/2014	Ministry of <b>Science</b> and Technolog	PI	580,000
Develop the research clinical data warehouse based on the patient privacy protection	08/2012-07/2013	Ministry of <b>Science</b> and Technolog	PI	507,000
Development of an Automated Laboratory Reporting System for Infectious Diseases	05/2012-12/2012	Ministry of Health and Welfare	PI	1,800,000

### Refereed Journal Papers

#### Journal Papers

- [1] Hsuan-Chia Yang , Shu-Hao Chang , Richard Lu , Der-Ming Liou\* "The effect of particulate matter size on cardiovascular health in Taipei Basin,Taiwan" , computer methods and programs in biomedicine December 2016 [SCI]
- [2] Ching-Heng Lin, Ying-Chih Lo,Pei-Yuan Hung,Der-Ming Liou\* "Building Chronic Kidney Disease Clinical Practice Guidelines Using the openEHR Guideline Definition Language" ,Methods of Information in Medicine., Sep. 2016. [SCI]
- [3] C. H. Lin, Y. C. Fann, and **D. M. Liou**\*, " An exploratory study using an openEHR two-level modeling approach to represent common data elements," *J. Am. Med. Inf. Assoc.*, ocv137.Feb2016 . [SCI]
- [4] H.M. Tsao, Y. C. Sun, and **D. M. Liou**\*, "A Rational Approach to Estimating the Surgical Demand Elasticity Needed to Guide Manpower Reallocation during Contagious Outbreaks," *PLoS One*, vol. 10, April 2015. [SCI]
- [5] C. H. Lin, N. Y. Wu, and **D. M. Liou**\*, "A multi-technique approach to bridge electronic case report form design and data standard adoption," *J. Biomed. Inform.*, Sep. 2014. [SCI]

- [6] C. H. Lin, N. Y. Wu, W. S. Lai, and **D. M. Liou**<sup>\*</sup>, "The comparison of a semi-automatic annotation tool and a natural language processing application for the generation of clinical statement entries," *J. Am. Med. Inf. Assoc.*, Oct. 2014. [SCI]
- [7] S. C. Kang, F. T. Pai, S. J. Hwang<sup>\*</sup>, H. M. Tsao, **D. M. Liou**, and I. F. Lin, "Non-cancer hospice care in Taiwan: a nationwide dataset analysis from 2005 to 2010," *J. Palliat. Med.*, vol. 17, pp. 407-14, Apr. 2014. [SCI]
- [8] H. L. Yeh, H. C. Tsou, H. C. Chiang, P. H. Chiang<sup>\*</sup>, and **D. M. Liou**<sup>\*</sup>, "The use of heat map with hierarchical clustering in mortality risk to identify "hot-spots" risk factors in polluted industrial areas," *The Journal of Taiwan Association for Medical Informatics*, vol. 22, pp. 01-14, Jun. 2013. [IM]
- [9] M. L. Pan<sup>\*</sup>, W. P. Chang<sup>\*</sup>, H. C. Lee, H. L. Tsai, C. S. Liu, **D. M. Liou**, Y. J. Sung, and T. W. Chin, "A longitudinal cohort study of incidence rates of inguinal hernia repair in 0- to 6-year-old children," *J. Pediatr. Surg.*, vol. 48, pp. 2327-31, Nov. 2013. [SCI]
- [10] L. H. Lee, A. Groß, M. Hartung, **D. M. Liou**<sup>\*</sup>, and E. Rahm, "A multi-part matching strategy for mapping LOINC with laboratory terminologies," *J. Am. Med. Inf. Assoc.*, Dec. 2013. [SCI]
- [11] L. H. Lee, H. Y. Chu, and **D. M. Liou**<sup>\*</sup>, "Development of a Semantic-based Search System for Immunization Knowledge," *Medinfo*, pp. 258-62, Aug. 2013. [IM]
- [12] L. H. Lee, Y. T. Chou, E. W. Huang, and **D. M. Liou**<sup>\*</sup>, "Design of a personal health record and health knowledge sharing system using IHE-XDS and OWL," *J. Med. Syst.*, vol. 37, p. 9921, Apr. 2013. [SCI]
- [13] W. P. Chang, Y. C. Chi, M. L. Pan, Y. J. Sun, Y. C. Liao, C. C. Yang, and **D. M. Liou**<sup>\*</sup>, "Drug expense of atopic dermatitis in Taiwan," *Taipei City Med J*, vol. 10, pp. 229-243, Sep. 2013. [DI]
- [14] S. S. Abdul, L. F. Luque, W. S. Jian, Y. C. Li, S. Crain, M. H. Hsu, Y. C. Wang, D. Khandregzen, E. Chuluunbaatar, P. A. Nguyen, and **D. M. Liou**<sup>\*</sup>, "Misleading health-related information promoted through video-based social media: Anorexia on YouTube," *J. Med. Internet Res.*, vol. 15, p. e30, Feb. 2013. [SCI]
- [15] S. S. Abdul, J. Scholl, P. Lee, W. S. Jian, **D. M. Liou**<sup>\*</sup>, and Y. C. Li<sup>\*</sup>, "Study on the potential for delay tolerant networks by health workers in low resource settings," *Comput. Methods Programs Biomed.*, vol. 107, pp. 557-64, Sep. 2012. [SCI]
- [16] S. S. Abdul, J. Scholl, C. C. Chen, M. D. Santos, W. S. Jian, **D. M. Liou**, and Y. C. Li<sup>\*</sup>, "Telemedicine utilization to support the management of the burns treatment involving patient pathways in both developed and developing countries: a case study," *Journal of Burn Care & Research*, vol. 33, pp. e207-12, Jul. 2012. [SCI]
- [17] W. P. Chang, P. C. Chen, Y. H. Kuo, M. L. Pan, Y. J. Sung, **D. M. Liou**<sup>\*</sup>, and C. M. Wu, "An analysis of drug expenses in the national health insurance database for dry eye syndrome patients in 2008," *Cheng Ching Medical Journal*, vol. 8, pp. 18-26, Jul. 2012.
- [18] C. C. Wu, E. W. Huang, **D. M. Liou**<sup>\*</sup>, Y. C. Liang, Y. H. Wang, and H. W. Chen, "Study of Applying CDA Standard and Multimedia Program to Implement a Graphic Interface for Physician Order Entry," *The Journal of Taiwan Association for Medical Informatics*, vol. 21, pp. 27-40, Jun. 2012.

- [19] W. P. Chang, C. M. Wu, L. C. Hung, Y. C. Chi, P. C. Chen, and **D. M. Liou**\*, "Evaluation of a multimedia pregnancy exercise program," *Taipei City Med J*, vol. 9, pp. 24-34, Jun. 2012. [DI]
- [20] N. Y. Wu, H. C. Cheng, J. S. Ko, Y. C. Cheng, P. W. Lin, W. C. Lin, C. Y. Chang\*, and **D. M. Liou**\*, "Magnetic resonance imaging for lung cancer detection: Experience in a population of more than 10,000 healthy individuals," *BMC Cancer*, vol. 11, p. 242, Jun. 2011. [SCI]
- [21] W. P. Chang, **D. M. Liou**, J. Y. Wang, Y. C. Chi, C. M. Wu, Y. S. Wang, and W. C. Chang\*, "Construction of integrated neural network and classification and regression tree approach to predict the lymphatic metastasis in colorectal cancer patients," *Taipei City Med J*, vol. 8, pp. 13-22, Mar. 2011. [DI]
- [22] S. S. Abdul, C. W. Lin, J. Scholl, L. Fernandez-Luque, W. S. Jian, M. H. Hsu, **D. M. Liou**, and Y. C. Li\*, "Facebook use leads to health-care reform in Taiwan," *Lancet*, vol. 377, pp. 2083-84, Jun. 2011. [SCI]
- [23] W. P. Chang, C. Y. Liu, H. C. Kuo, C. M. Wu, Y. C. Chi, P. C. Chen, and **D. M. Liou**\*, "An evaluation of telemedicine service quality in Matsuh," *Taipei City Med J*, vol. 8, pp. 287-99, Dec. 2011. [DI]
- [24] E. W. Huang, R. S. Hung, S. F. Chiou, F. Y. Liu, and **D. M. Liou**, "Design and Development of a Tele-Healthcare Information System Based on Web Services and HL7 Standards," *Adv Exp Med Biol*, vol. 696, pp. 599-606, 2011. [SCI]
- [25] E. W. Huang, T. L. Tseng, M. L. Change, M. L. Pan, and **D. M. Liou**\*, "Generating standardized clinical documents for medical information exchanges," *IT Professional*, vol. 12, pp. 26-32, Mar. 2010. [EI]
- [26] P. H. Chiang, G. J. Musa, Dennis Hsieh, P. H., C. P. Wen, **D. M. Liou**\*, T. C. Chan, H. H. Chen, and H. L. Chen, "Spatial interpolation of cadmium contamination of agricultural soils in Changhua county, Taiwan," *Int J Environ Pollut*, vol. 40, pp. 332-36, Feb. 2010. [SCI]
- [27] W. Y. Yang, L. H. Lee, H. L. Chien, H. Y. Chu, Y. T. Chou, and **D. M. Liou**\*, "The design of the HL7 RIM-based sharing components for clinical information systems," *Int J Hum Soc Sci*, vol. 5, pp. 130-33, Winter 2010. [EI]
- [28] S. S. Abdul\*, L. A. Ahmed, R. R. Sudhir, J. Scholl, Y. C. Li, and **D. M. Liou**, "Comparison of documentation time between an electronic and a paper-based record system by optometrists at an eye hospital in south India: A time-motion study," *Comput Meth Prog Bio*, vol. 100, pp. 283-88, May 2010. [SCI]
- [29] W. P. Chang, Y. C. Chi, C. L. Wu, and **D. M. Liou**\*, "The introduction of a medical information exchange platform to facilitate sharing of medical resources between Taipei and remote areas," *Taipei City Med J*, vol. 6, pp. 35-44, Feb. 2009. [DI]
- [30] C. Y. Wang, N. Miyazaki, T. Yamashita, A. Higashiura, A. Nakagawa, T. C. Li, N. Takeda, L. Xing, E. Hjalmarsson, C. Friberg, **D. M. Liou**, Y. J. Sung, T. Tsukihara, Y. Matsuura, T. Miyamura, and R. H. Cheng\*, "Crystallization and preliminary X-ray diffraction analysis of recombinant hepatitis E virus-like particle," *Acta Crystallogr. F-Struct. Biol. Cryst. Commun.*, vol. 64, pp. 318-22, Apr. 2008. [SCI]
- [31] L. J. Tsai, S. H. Hsiao, L. M. Tsai, C. Y. Lin, J. J. Tsai, **D. M. Liou**, and J. L. Lan\*, "The sodium-dependent glucose cotransporter SLC5A11 as an autoimmune modifier gene in SLE," *Tissue Antigens*, vol. 71, pp. 114-26, Feb. 2008. [SCI]
- [32] 黃俊源, 張偉斌, 劉德明, and 朱惠中\*, "使用HL7 V3建置多院區個人歸戶之電子病

歷—以台北市聯合醫院為例," 醫療資訊雜誌, vol. 17, pp. 1-17, Sep. 2008.

## Conference Papers

- [1] **D. M. Liou**\*, "銀髮族健康照護科技應用與未來發展趨勢," presented at the 2014 The Modern Engineering & Technology Seminar, Taipei, Taiwan, Nov. 2014
- [2] C. H. Lin and **D. M. Liou**\*, "Design and implementation of responsibility hospitalemergency real-time information query and navigation system," in *Joint Conference of Medical Informatics in Taiwan 2014*, Taipei, Taiwan, Nov. 2014, p. 164
- [3] C. H. Lin, W. S. Lai, L. H. Lee, H. M. Tsao, and **D. M. Liou**\*, "An entry generation pipeline for converting free-text medical document into clinical document architecture document with entry-level," in *International Conferences on Biomedical and Health Informatics 2014*, Valencia, Spain, Jun. 2014, pp. 505-508
- [4] C. Y. Li\*, E. W. Huang, and **D. M. Liou**, "A study of using Taiwan health statistics data to the analysis of contagious diseases prevention," in *Joint Conference of Medical Informatics in Taiwan 2014*, Taipei, Taiwan, Nov. 2014, pp. 125-130
- [5] P. Y. Hung, C. H. Lin, and **D. M. Liou**\*, "A preliminary study of openEHR Two-level modelling approach applied on health examination report," in *Joint Conference of Medical Informatics in Taiwan 2014*, Taipei, Taiwan, Nov. 2014, pp. 71-76
- [6] S. H. Chang, M. L. Pan, Y. J. Sung, and **D. M. Liou**\*, "帶狀皰疹患者就醫特性之探討," in *Joint Conference of Medical Informatics in Taiwan 2014*, Taipei, Taiwan, Nov. 2014, pp. 131-135
- [7] 江文成, 林敬恒, and 劉德明\*, "使用本體論之基於角色之臨床試驗權限控制," in *Joint Conference of Medical Informatics in Taiwan 2013*, Taipei, Taiwan, Nov. 2013, pp. 33-38
- [8] C. C. Wu and **D. M. Liou**\*, "An investigation of lexical similarity-based alignment between Taiwan procedure national health insurance codes and SNOMED CT," in *Joint Conference of Medical Informatics in Taiwan 2013*, Taipei, Taiwan, Nov. 2013, pp. 212-218
- [9] T. C. Tsai, C. H. Lin, U. C. Yang, and **D. M. Liou**\*, "建立可互通之臨床試驗表單研究," in *Joint Conference of Medical Informatics in Taiwan 2013*, Taipei, Taiwan, Nov. 2013, pp. 168-174

- [10] M. J. Li, Y. C. Liu, W. M. Wu, **D. M. Liou**, and U. C. Yang\*, "An image core compatible anonymous clinical image system," in *Joint Conference of Medical Informatics in Taiwan 2013*, Taipei, Taiwan, Nov. 2013, pp. 89-95
- [11] B. W. Li and **D. M. Liou**\*, "Improve illustrations in electronic medical records of surgical domain with tablet PC," in *Joint Conference of Medical Informatics in Taiwan 2013*, Taipei, Taiwan, Nov. 2013, pp. 62-66
- [12] W. S. Lai, C. H. Lin, and **D. M. Liou**\*, "Using medical text extracting to structured medical problem list," in *Joint Conference of Medical Informatics in Taiwan 2013*, Taipei, Taiwan, Nov. 2013, p. 232
- [13] H. L. Yeh, P. H. Chiang, **D. M. Liou**, and H. C. Tsou, "Applications of heat map with hierarchical clustering in mortality risk – “hot-spots” risk assessment in industrial polluted area," in *6th Asian Young Researchers Conference on Computational and Omics Biology*, Shenzhen, China, Dec. 2012, p. 65
- [14] K. H. Wang, E. W. Huang, C. W. Wang, P. L. Chung, and **D. M. Liou**\*, "Visualized monitoring system in discharge planning service established by business intelligence - using a hospital in Taipei as an example," in *Joint Conference of Medical Informatics in Taiwan 2012*, Taipei, Taiwan, Oct. 2012, p. 286
- [15] H. M. Tsao, C. T. Chen, J. J. Fen, K. H. Shih, C. W. Chi, W. S. Chen, U. C. Yang, and **D. M. Liou**\*, "Biomedical research information system," in *International Symposium on Clinical and Translational Cancer Research*, Kaohsiung, Taiwan, May 2012, pp. 116-117
- [16] F. T. Pai, N. C. Hu, J. D. Chen, and **D. M. Liou**\*, "糖尿病病患使用DPP4與否與常見感染性疾病之探討," in *Joint Conference of Medical Informatics in Taiwan 2012*, Taipei, Taiwan, Oct. 2012, pp. 199-202
- [17] **D. M. Liou**\*, "運用數位化醫院建設標準達到醫院訊息化集成," presented at the 第六屆中國醫院院長年會, Xiamen, China, Nov. 2012
- [18] Y. F. Lin and **D. M. Liou**\*, "Research on constructing the pedigree by using the clinical information," in *Joint Conference of Medical Informatics in Taiwan 2012*, Taipei, Taiwan, Oct. 2012, pp. 238-243
- [19] K. C. Liao, Y. J. Sung, and **D. M. Liou**\*, "A prototype platform for structured based of operative report," in *Joint Conference of Medical Informatics in Taiwan 2012*, Taipei,

- Taiwan, Oct. 2012, p. 284
- [20] P. S. Li, C. H. Lin, and **D. M. Liou**<sup>\*</sup>, "A rule-based engine for constructing ontology-driven medical knowledge," in *Joint Conference of Medical Informatics in Taiwan 2012*, Taipei, Taiwan, Oct. 2012, pp. 192-198
- [21] B. W. Li and **D. M. Liou**<sup>\*</sup>, "Evaluation of electronic health record system to make illustrations in operation notes," in *Joint Conference of Medical Informatics in Taiwan 2012*, Taipei, Taiwan, Oct. 2012, p. 283
- [22] Y. W. Chen, Y. J. Sung, and D. M. Liou, "Long term medical spending in systemic lupus erythematosus and lupus nephritis," in *6th Asian Young Researchers Conference on Computational and Omics Biology*, Shenzhen, China, Dec. 2012, p. 63
- [23] G. H. Chen, T. C. Tsai, K. W. Ming, **D. M. Liou**, and U. C. Yang<sup>\*</sup>, "Accelerate the multicenter clinical trial application by using an information management approach," in *Joint Conference of Medical Informatics in Taiwan 2012*, Taipei, Taiwan, Oct. 2012, p. 285
- [24] 陳薇琳, 蔡東穎, 江博煌, 張偉斌, 吳乃元, and 劉德明<sup>\*</sup>, "高血脂之健康風險評估及健康照護模式之研究," in *Joint Conference of Medical Informatics in Taiwan 2011*, Taichung, Taiwan, Nov. 2011, pp. 70-75
- [25] C. H. Lin, U. C. Yang, and **D. M. Liou**<sup>\*</sup>, "Research on conversion the pathology report from free text to structure," in *Joint Conference of Medical Informatics in Taiwan 2011*, Taichung, Taiwan, Nov. 2011, pp. 171-176
- [26] E. W. Huang, J. C. Chen, F. L. Liu, S. F. Chiou, C. M. Duh, **D. M. Liou**<sup>\*</sup>, and S. C. Wang, "Development of a web-based quality indicators monitoring system for long-term care facilities," in *Proceedings of 2011 4th International Conference on Biomedical Engineering and Informatics*, Shanghai, China, Oct. 2011, pp. 1936-1940.[EI]
- [27] H. L. Hsu, W. T. Chang, M. R. Hsu, E. W. Huang, C. H. Peng, and **D. M. Liou**<sup>\*</sup>, "Exchange telecare informatics and nursing informatics with HL7 CDA," in *Joint Conference of Medical Informatics in Taiwan 2011*, Taichung, Taiwan, Nov. 2011, pp. 278-283
- [28] S. W. Chou, K. P. Chung, I. J. Chiang, F. F. Liao, and **D. M. Liou**<sup>\*</sup>, "Pilot study of developing value-added platform for quality indicators in Taiwan," in *Joint Conference*

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- [29] H. H. Chen\*, C. F. Lee, L. H. Lee, C. Y. Chen, C. N. Chang, and **D. M. Liou**, "Automated and simple method for presenting symptomatic elements of cancer checklist from formatted pathologic report," in *Proceedings of the 7th Asia Pacific IAP Congress*, Taipei, Taiwan, May 2011
- [30] W. S. Chang Chien, C. B. Yang, and **D. M. Liou\***, "Development on clinical quality indicator system by MVC model," in *Joint Conference of Medical Informatics in Taiwan 2011*, Taichung, Taiwan, Nov. 2011, pp. 229-234
- [31] 蔡采珈, 柯立凡, 平曉鷗, 賴飛熊, 楊永正, and 劉德明\*, "臨床研究資料之自動收集," in *Joint Conference of Medical Informatics in Taiwan 2010*, Taipei, Taiwan, Sep. 2010, p. 380
- [32] H. T. Wu and **D. M. Liou\***, "Achieve the secondary use of healthcare data by creating a standard-based clinical research database," in *Proceedings of the CDISC Interchange Europe*, London, UK, Apr. 2010
- [33] Y. T. Wang and **D. M. Liou\***, "Design and implement web services for sharing standardized medication information between enterprises," in *Proceedings of 2010 Second International Conference on Communication Systems, Networks and Applications*, Hong Kong, China, Jun. 2010, pp. 101-104.[EI]
- [34] J. W. Lin and **D. M. Liou\***, "Implementing an image information sharing system base on IHE XDS-I profile and ontology," in *Proceedings of 2010 Second International Conference on Communication Systems, Networks and Applications*, Hong Kong, China, Jun. 2010, pp. 109-111.[EI]
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- [36] Y. Y. Ko and **D. M. Liou\***, "The study of managing the personal consent in the electronic healthcare environment," in *Proceedings of International Conference on Computer, Electrical, and Systems Science, and Engineering*, Kyoto, Japan, May 2010.[EI]
- [37] H. Y. Kao and **D. M. Liou\***, "Research on applying the Continuity Care Document to generate a medical record with entry level," in *Proceedings of International Conference*



on Computer, Electrical, and Systems Science, and Engineering, Kyoto, Japan, May 2010, pp. 318-322.[EI]

[38] X. W. Huang and **D. M. Liou**\*, "Implementation of an electronic emergency referral document system," in *Proceedings of 2010 2nd International Conference on Education Technology and Computer*, Shanghai, China, Jun. 2010, pp. 93-96.[EI]

[39] P. L. Chung, S. Y. Tan, Y. M. Chung, and **D. M. Liou**\*, "Research on constructing nursing diagnosis decision support system," in *Joint Conference of Medical Informatics in Taiwan 2010*, Taipei, Taiwan, Sep. 2010, pp. 131-137

[40] C. T. Chang, T. C. Tsai, K. Y. Chen, **D. M. Liou**, and U. C. Yang\*, "臨床試驗計畫追蹤與管理系統的在地化實作," in *Joint Conference of Medical Informatics in Taiwan 2010*, Taipei, Taiwan, Sep. 2010, pp. 89-94

**Invention Patent**

類別	專利名稱	國別	專利號碼	發明人	專利權人	專利核准日期
發明專利	文件條目層轉換及電子表單設計之方法和系統	台灣	發明第 I563403號	林敬恒 劉德明	國立陽明大學	2016.12.21~ 2035.03.05