

PUBLICATIONS – BY TOPIC

Keys: AI – Artificial Intelligence, HI – Biomedical and Health Informatics

Dynamic Decision Making

Multi-Level, Multi-Perspective Dynamic Decision Making – AI

1. Leong TY. Dynamic decision modeling in medicine: A critique of existing techniques. Proceedings of the 17th Symposium on Computer Applications in Medical Care (SCAMC). IEEE; 1993. p. 478-84.
2. Leong TY. Dynamic decision making: A unifying view. Proceedings of the 1994 AAAI Spring Symposium on Decision-Theoretic Planning; 1 Mar; Palo Alto, CA, USA. 1994. p. 155-61.
3. Leong TY. Multiple perspective reasoning. In: Aiello LC, Doyle J, Shapiro S, editors. Proceedings of the Fifth International Conference on Principles of Knowledge Representation and Reasoning (KR'96); Cambridge, MA. Morgan Kaufmann; 1996. p. 562-73.
4. Leong TY. A new methodology for clinical decision analysis over time: Theory and practice. Proceedings of the 1996 AAAI Spring Symposium on Artificial Intelligence in Medicine 1996. p. 89-93.
5. Leong TY. Multiple perspective reasoning. Artificial Intelligence. 1998;105(1-2):209-61
6. Leong TY, Cao CG. Modeling medical decisions in dynamol: A new general framework of dynamic decision analysis. Stud Health Technol Inform. 1998;52(Pt 1):483-87
7. Zheng JY, Leong T-Y. Consistency management in multiple-perspective medical decision analysis. Stud Health Technol Inform. 1998;52(Pt 1):503-07
8. Sundaresh S, Haddawy P, Leong TY, Poh KL. Multi-level multi-perspective reasoning. Proceedings of the The National Computer Science and Engineering Conference (NCSEC 1999); 15-17 December 1999; Bangkok, Thailand. 1999. p. 67-74.
9. Sundaresh S, Leong TY, Haddawy P. Supporting multi-level multi-perspective dynamic decision making in medicine. Proc AMIA Symp. 1999:161-5

Dynamic Decision Modeling and Analysis – HI

10. Leong TY. Murmur clinic: A diagnostic expert system for auscultation. Proceedings of the 11th Symposium on Computer Applications in Medical Care (SCAMC). IEEE; 1987. p. 166-70.
11. Harmanec D, Leong TY, Sundaresh S, Poh KL, Yeo TT, Ng I, Lew TWK. Decision analytic approach to severe head injury management. Proc AMIA Symp. 1999:271-75
12. Lim TK, Cherian J, Poh KL, Leong TY. The rapid diagnosis of smear negative pulmonary tuberculosis: A cost-effectiveness analysis. Respiriology. 2000;5(4):403-09
13. Dora CS, Sarkar M, Sundaresh S, Harmanec D, Yeo TT, Poh KL, Leong T-Y. Building decision support systems for treating severe head injuries. Proceedings of the IEEE International Conference on Systems, Man and Cybernetics; Oct 7-10 2001. p. 2952-57.
14. Lin L, Poh KL, Leong TY, Lim TK. Optimal time for surgical intervention in the management of spontaneous pneumothorax: A dynamic decision analytic approach. In: Mohammadian M, editor. Proceedings of the International Conference on Computational Intelligence for Modelling, Control and Automation (CIMCA2004); Gold Coast - Australia. 2004. p. 345-50.
15. Han B, Leong TY. We did the right thing: An intervention analysis approach to modeling intervened sars propagation in singapore. Stud Health Technol Inform. 2004;107(Pt 2):1246-50
16. Ong CH, Leong TY. Supporting decision-making in intrusion detection. Proceedings of the American Association for Artificial Intelligence (AAAI) Workshop on Sensor Networks 2004.
17. Wong SS, Leong APK, Leong TY. Cost-effectiveness analysis of colorectal cancer screening strategies in singapore: A dynamic decision analytic approach. Stud Health Technol Inform. 2004;107(Pt 2):104-08

Strategic Action Planning and Decision Making- AI

18. Nguyen Dinh TH, Leong T-Y. A surprise triggered adaptive and reactive (star) framework for online adaptation in non-stationary environments. In: Darken CJ, Youngblood GM, editors. Proceedings of the Fifth Annual International Artificial Intelligence and Interactive Digital Entertainment Conference (AIIDE 2009); Palo Alto, California. AAAI Press; 2009. p. 82-87.
19. Chen Q, Leong T-Y. Towards a multi-level game model for influenza epidemics. *Stud Health Technol Inform.* 2010;160(Pt 1):457-61
20. Nguyen Dinh TH, Hsu DY, Lee W-S, Leong T-Y, Kaelbling L, Lozano-Perez T, Grant AH. Capir: Collaborative action planning with intention recognition. Proceedings of the Seventh Annual International Artificial Intelligence in Interactive and Digital Media Conference (AIIDE 2011); Palo Alto, CA. AAAI Press; 2011. p. 61-66.
21. Nguyen Dinh TH, Lee W-S, Leong T-Y. Bootstrapping monte carlo tree search with an imperfect heuristic. In: P. Flach et al., editor. Machine learning and knowledge discovery in databases: European conference (ecml pkdd 2012), proceedings: Springer-Verlag; 2012. p. 164-79.
22. Nguyen Dinh TH, Silander TV, Lee W-S, Leong T-Y. Bootstrapping simulation-based algorithms with a suboptimal policy. Proceedings of the 24th International Conference on Automated Planning and Scheduling (ICAPS 2014); June 21-26; Portsmouth, USA. 2014. p. 181-89.
23. Xu X, Huang T, Wei P, Narayan A, Leong TY. Hierarchical reinforcement learning in starcraft ii with human expertise in subgoals selection Proceedings of the Workshop on Bridging the Gap Between AI Planning and Reinforcement Learning (PRL) at the 30th International Conference on Automated Planning and Scheduling; 26-30 October; Online. 2020.

Transfer and Reinforcement Learning in Dynamic Situations - AI

24. Nguyen Thanh T, Silander TV, Leong T-Y. Transfer learning as representation selection. Proceedings of the International Conference on Machine Learning (ICML) 2012 Workshop on Representation Learning; Edinburgh, UK. 2012.
25. Nguyen Thanh T, Silander TV, Leong T-Y. Transferring expectations in model-based reinforcement learning. In: Bartlett P, Pereira FCN, Burges CJC, Bottou L, Weinberger KQ, editors. Advances in neural information processing systems (nips) 25 2012. p. 2564--72.
26. Nguyen Thanh T, Li Z, Silander TV, Leong T-Y. Online feature selection for model-based reinforcement learning. Proceedings of the International Conference on Machine Learning (ICML 2013); June 16-21; Atlanta, USA. 2013. p. 498-506.
27. Li Z, Narayan A, Leong T-Y. A core task abstraction approach to hierarchical reinforcement learning (extended abstract). In: Thangarajah J, Tuyls K, Jonker C, Marsella S, editors. Proceedings of the 2016 International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2016); 9-13 May 2016; Singapore. 2016. p. 1411-12.
28. Li Z, Narayan A, Leong T-Y. An efficient approach to model-based hierarchical reinforcement learning. Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence (AAAI-17); 4-9 Feb 2017; San Francisco, CA, USA. 2017. p. 3583-89.
29. Nguyen TT, Silander T, Li Z, Leong T-Y. Scalable transfer learning in heterogeneous, dynamic environments. *Artificial Intelligence.* 2015. <http://dx.doi.org/10.1016/j.artint.2015.09.013>
30. Narayan A, Li Z, Leong T-Y. Seapot-rl: Selective exploration algorithm for policy transfer in reinforcement learning (extended abstract). Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence (AAAI-17); 4-9 Feb 2017; San Francisco, CA, USA. 2017. p. 4975-76.
31. Narayan A, Leong TY. Transfer in model based reinforcement learning as a partial observability problem. Proceedings of the NeurIPS 2018 Workshop on Reinforcement Learning under Partial Observability; 8 December 2018; Montreal, Canada. 2018. p. pp.

32. Narayan A, Leong T-Y. Policy transfer in reinforcement learning: A selective exploration approach. Proceedings of the Adaptive and Learning Agents Workshop at AAMAS 2019; 13-14 May 2019; Montreal, Canada. 2019.
33. Narayan A, Leong TY. Effects of task similarity on policy transfer with selective exploration in reinforcement learning (extended abstract). Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent Systems; 13-17 May 2019; Montreal QC, Canada. International Foundation for Autonomous Agents and Multiagent Systems; 2019. p. 2132–34.
34. Wei P, Qu X, Ke Y, Leong T-Y, Ong YS. Adaptive knowledge transfer based on transfer neural kernel network. Proceedings of the 19th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS 20); 9-13 May, 2020; Auckland, New Zealand. International Foundation for Autonomous Agents and Multiagent Systems; 2020. p. 1485–93.
35. Wei P, Ke Y, Xu Z, Leong T-Y. Succinct adaptive manifold transfer. Proceedings of the 29th ACM International Conference on Information and Knowledge Management (CIKM '20); 19–23 October, 2020; Virtual Event, Ireland. New York, NY, USA. ACM; 2020. p. 1615-24.
36. Wei P, Ke Y, Qu X, Leong TY. Subdomain adaptation with manifolds discrepancy alignment. IEEE Transactions on Cybernetics. 2021:1-11. 10.1109/TCYB.2021.3071244
37. Wei PF, Leong TY. Randomized transferable machine. Proceedings of the 2020 25th International Conference on Pattern Recognition (ICPR); 10-15 Jan. 2021 2021. p. 8711-18.

Presentations – AI Planning and Dynamic Decision Making

38. Leong TY. Dynamic decision making - challenging the future of human-aware artificial intelligence. Presented at Defence Science and Technology Agency (DSTA) Academy Technical Talk. Singapore. 17 November 2016.
39. Leong TY. AI planning in the real world: Concepts, trends, opportunities. Presented at PLAN AI Workshop for Government Planning Agencies organized by URA. Singapore. 22 March 2021.

Knowledge Representation and Discovery

Dynamic Decision Modeling from Knowledge and Data – AI and HI Methodology

40. Leong T-Y. Representation requirements for supporting decision model formulation. In: D'Ambrosio BD, Smets P, Bonissone PP, editors. Proceedings of the Seventh Conference on Uncertainty in Artificial Intelligence (UAI). Morgan Kaufmann; 1991. p. 212-19.
41. Leong TY. Representation requirements for supporting knowledge-based construction of decision models in medicine. . Proceedings of the 15th Symposium on Computer Applications in Medical Care (SCAMC). IEEE; 1991. p. 634-38.
42. Yeh S, Leong T-Y. Automatic generation of transition probabilities in dynamic decision modeling: A case study. Proceedings of the 1994 AAAI Spring Symposium on Artificial Intelligence in Medicine; Palo Alto, CA, USA. 1994.
43. Cao CG, Leong TY. A learning approach to knowledge acquisition for therapy decision making. Proceedings of the 1996 AAAI Spring Symposium on Artificial Intelligence in Medicine 1996. p. 11-15.
44. Cao CG, Leong T-Y. Learning conditional probabilities for dynamic influence views. Proceedings of the Working Notes of the IJCAI Workshop on Intelligent Data Analysis in Medicine and Pharmacology (IDAMAP97) 1997. p. 11-19.
45. Cao CG, Leong T-Y, Leong APK, Seow FC. Induction of diagnostic test strategies with multi-level information measures. Stud Health Technol Inform. 1998;52(Pt 1):477-82
46. Cao CG, Leong T-Y, Leong APK, Seow FC. Dynamic decision analysis in medicine: A data-driven approach. International Journal of Medical Informatics. 1998;51:13-28

47. Wang CG, Leong T-Y. Knowledge-based formulation of dynamic decision models in medicine. Proceedings of the 5th Pacific-Rim Conference on Artificial Intelligence (PRICAI98) 1998. p. 506-17.
48. Li J, Leong TY. An architecture for automated development of clinical practice guidelines in critical care: Preliminary report. Proceedings of the Intelligent Data Analysis in Medicine and Pharmacology Workshop (IDAMAP 99) 1999. p. 64-66.
49. Lau AH, Leong TY. Probes: A framework for probabilities elicitation from experts. Proc AMIA Symp. 1999:301-05
50. Zhao F, Leong TY. A data preprocessing framework for supporting probability-learning in dynamic decision modeling in medicine. Proc AMIA Symp. 2000:933-7
51. Wang CG, Leong TY, Leong APK, Seow FC. Knowledge-based formulation of dynamic decision models in medicine. Medical Decision Making. 2000;18(4):458
52. Qi XZ, Leong T-Y. Constructing influence views from data to support dynamic decision making in medicine. Stud Health Technol Inform. 2001;84(Pt 2):1389-93.
53. Zhu AL, Leong TY. Automating dynamic decision model construction to support clinical practical guideline development. In: Heller B, Loffler M, Musen M, Stefanelli M, editors. Computer-based support for clinical guidelines and protocols: Proceedings of ewglp 2000: IOS Press; 2001. p. 133-46.
54. Zhu AL, Li J, Leong TY. Automated knowledge extraction for decision model construction: A data mining approach. AMIA Annu Symp Proc. 2003;2003:758-62
55. Han B, Leong TY, Li GL. Learning the dynamic bayesian networks structure of ventilation process in a linear system identification perspective. Proceedings of the IEEE Workshop on Life Science Data Mining; 1 November 2004.; Brighton, U. K. 2004.
56. Joshi R, Li XL, Ramachandaran S, Leong TY. Automatic model structuring from text using biomedical ontology. Proceedings of the American Association for Artificial Intelligence (AAAI) Workshop on Adaptive Text Extraction and Mining (ATEM-2004); San Jose, California. 2004.

Temporal Representation and Pattern Recognition – AI and HI Methodology

57. Li J, Leong TY. Using linear regression functions to abstract high-frequency data in medicine. Proc AMIA Symp. 2000:492-6
58. Li J, Leong TY. Pdl: A definition language for trend pattern representation and detection in medicine. Proc AMIA Symp. 2001:373-7
59. Sarkar M, Leong T-Y. Fuzzy similarity based fractal dimensions to characterize medical time series. In: Brodley CE, Danyluk AP, editors. Proceedings of the Eighteenth International Conference on Machine Learning (ICML); June 28-July 1; Williams College, Williamstown, MA, USA. Morgan Kaufmann; 2001. p. 465-72.
60. Sarkar M, Leong T-Y. Top-down approaches to abstract medical time series using linear segments. Proceedings of the IEEE International Conference on Systems, Man and Cybernetics; 7-10 Oct 2001. p. 765-70.
61. Sarkar M, Leong TY. Characterization of medical time series using fuzzy similarity-based fractal dimensions. Artificial Intelligence in Medicine. 2003;27(2):201-22

Context Sensitive, Probabilistic and Causal Representation, Inference, and Learning - AI

62. Leong T-Y. Representing context-sensitive knowledge in a network formalism: A preliminary report. . In: Dubois D, Wellman MP, D'Ambrosio B, Smets P, editors. Proceedings of the Eighth Conference on Uncertainty in Artificial Intelligence (UAI). Morgan Kaufmann; 1992. p. 166-73.
63. Druzdzal MJ, Lu TC, Leong T-Y. Interactive construction of decision models based on causal mechanisms. Proceedings of the 1998 AAAI Spring Symposium on Interactive and Mixed-Initiative Decision Theoretic Systems 1998. p. 38-44.

64. Lu TC, Druzdzel MJ, Leong T-Y. Causal mechanism-based model constructions. Proceedings of the Sixteenth Conference on Uncertainty in Artificial Intelligence (UAI); 30 Jun - 3 Jul; Stanford University, California, USA. Morgan Kaufmann; 2000. p. 353-62.
65. Jiang CA, Leong TY, Poh KL. Pgmcmc: A framework for probabilistic graphic model combination. AMIA Annu Symp Proc. 2005;2005:370-74
66. Jiang CA, Poh KL, Leong TY. Integration of probabilistic graphic models for decision support. Proceedings of the 2005 AAAI Spring Symposium on Challenges to Decision Support in a Changing World; March 21-23; Stanford University. 2005. p. 40-47.
67. Joshi R, Leong TY. Adaptive modeling framework for systems biology. Proceedings of the 2005 AAAI Spring Symposium on Challenges to Decision Support in a Changing World; March 21-23; Stanford University. 2005. p. 48-53.
68. Joshi R, Leong TY. Patient-specific inference and situation-dependent classification using context-sensitive networks. AMIA Annu Symp Proc. 2006:404-8.
69. Joshi R, Li G, Leong TY. Context-aware probabilistic reasoning for proactive health care. Proceedings of the Working Notes of the Second Workshop on Artificial Intelligence Techniques for Ambience Intelligence (AITAmI'07) at the Intl Joint Conf on Artificial Intelligence (IJCAI); Hyderabad, India. 2007.
70. Li G, Leong TY. Biomedical knowledge discovery with topological constraints modeling in bayesian networks: A preliminary report. Stud Health Technol Inform. 2007;129(Pt 2):560-65
71. Li G, Leong T-Y. Active learning for causal bayesian network structure with non-symmetrical entropy. In: Theeramunkong T, Kijisirikul B, Cercone N, Ho TB, editors. LNAI 5467 advances in knowledge discovery and data mining: 13th pacific-asia conference, pakdd 2009 proceedings. Bangkok, Thailand: Berlin / Heidelberg: Springer.; 2009. p. 290-301.
72. Guo W, Leong T-Y. An analytic characterization of model minimization in factored markov decision processes. Proceedings of the Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI-2010); Atlanta, Georgia. AAAI Press; 2010. p. 1077-82.
73. Silander TV, Leong T-Y. A dynamic programming algorithm for learning chain event graphs. In: Fürnkranz J, Hüllermeier E, Higuchi T, editors. Proceedings of the Discovery Science: The Sixteenth International Conference on Discovery Science (DS 2013); 6 - 9 Oct; Singapore. Springer; 2013. p. 201-16.
74. Vo TV, Wei P, Bergsma W, Leong TY. Causal modeling with stochastic confounders. In: Arindam B, Kenji F, editors. Proceedings of the Proceedings of The 24th International Conference on Artificial Intelligence and Statistics (AISTATS 21); 13-15 April, 2021; Proceedings of Machine Learning Research. PMLR; 2021. p. 3025--33.

Multimodal and Multiview Learning for Discovery, Diagnosis and Prediction

Learning from clinical and genomic data - HI

General clinical domains

75. Sarkar M, Leong TY. Application of k-nearest neighbors algorithm on breast cancer diagnosis problem. Proc AMIA Symp. 2000:759-63
76. Sarkar M, Leong T-Y. Nonparametric techniques to extract fuzzy rules for breast cancer diagnosis problem. Stud Health Technol Inform. 2001;84(Pt 2):1394-98
77. Sarkar M, Leong T-Y. Fuzzy k-means clustering with missing values. Proc AMIA Symp. 2001:588-92
78. Sarkar M, Qi XZ, Poh KL, Leong T-Y. Performance of existing prognostic factors to diagnose colorectal cancer -- a critical view. Proceedings of the IEEE International Conference on Engineering in Medicine and Biology; 25-28 Oct 2001. p. 3909-12.

79. Li GL, Leong TY. A framework to learn bayesian networks from changing, multiple-source biomedical data. Proceedings of the 2005 AAAI Spring Symposium on Challenges to Decision Support in a Changing World; March 21-23; Stanford University. 2005. p. 66-72.
80. Chen Q, Leong T-Y, Li G, Heng CK. Predicting coronary artery disease with medical profile and gene polymorphisms data. Stud Health Technol Inform. 2007;129(Pt 2):1219-24
81. Pang BC, Kuralmani V, Joshi R, Yin H, Lee KK, Ang BT, Li J, Leong TY, Ng I. Hybrid outcome prediction model for severe traumatic brain injury. Journal of Neurotrauma. 2007 Jan;24(1):136-46
82. Yin H, Leong T-Y. A model-driven approach to imbalanced data sampling in medical decision making. Stud Health Technol Inform. 2010;160(Pt 2):856-60

Genomics

83. Sarkar M, Leong T-Y. Splice junction classification problems for dna sequences: Representation issues. Proceedings of the IEEE International Conference on Engineering in Medicine and Biology; 25-28 Oct 2001. p. 2895 - 98.
84. Li GL, Leong TY, Zhang LX. Translation initiation sites prediction with mixture gaussian models. Proceedings of the 4th Workshop on Algorithms in Bioinformatics (WABI 2004); Bergen, Norway. 2004. p. 338-49.
85. Li X, Joshi R, Ramachandaran S, Leong TY. Classifying biomedical citations without labeled training examples. Proceedings of the IEEE International Conference on Data Mining (ICDM) 2004. p. 455-58.
86. Li G, Leong T-Y. Feature selection for the prediction of translation initiation sites. Genomics, Proteomics & Bioinformatics. 2005;3:73-83
87. Li GL, Leong TY, Zhang LX. Translation initiation sites prediction with mixture gaussian models in human cdna sequences. IEEE Transactions on Knowledge and Data Engineering. 2005;17:1152-60
88. Lin L, Wong LS, Leong TY, Lai PS. Linkagetracker: A discriminative pattern tracking approach to linkage disequilibrium mapping. Proceedings of the International Conference on Database Systems for Advanced Applications (DASFAA); Apr 18-20; Beijing - China. 2005. p. 30-42.
89. Li G, Leong T-Y, Zhang L, Han B. Estimating relative transcriptional time delays from multiple microarray time-series data. Proceedings of the The 3rd Annual RECOMB Satellite Workshop on Regulatory Genomics 2006. p. 138-39.
90. Lin L, Wong LS, Leong T-Y, Lai PS. Ectracker – an efficient algorithm for haplotype analysis and classification. Stud Health Technol Inform. 2007;129(Pt 2):1270-74
91. Lin L, Wong LS, Leong TY, Lai PS. Efficient mining of haplotype patterns for linkage equilibrium mapping. Journal of Bioinformatics and Computational Biology. 2010;Dec 8(Suppl. 1):127-46

Learning from imaging and multimodal data - HI

General Clinical Domains

92. Liu J, Leong TY, Chee KB, Tan BP, Shuter B, Wang S-C. Set-based cascading approaches for magnetic resonance (mr) image segmentation (scamis). AMIA Annu Symp Proc. 2006;2006:504-08
93. Liu J, Leong TY, Tan BPE, Chee KB, Shuter B, Wang S-C. A set-based hybrid approach (sha) for mri segmentation. Proceedings of the 9th International Conference on Control, Automation, Robotics and Vision (ICARCV 2006); 5 - 8 December 2006; Singapore. 2006. p. 631-36.

Traumatic Brain Injury Management

94. Gong T, Tan CL, Leong TY, Lee CK, Pang BC, Lim CCT, Tian Q, Tang S, Zhang Z. Text mining in radiology reports. Proceedings of the 2008 Eighth IEEE International Conference on Data Mining (ICDM 2008); Pisa, Italy. IEEE Computer Society; 2008. p. 815-20.

95. Liu R, Tan CL, Leong TY, Lee CK, Pang BC, Lim CCT, Tian Q, Tang S, Zhang Z. Hemorrhage slices detection in brain ct images. Proceedings of the Pattern Recognition, 2008 ICPR 2008 19th International Conference on; 8-11 Dec. 2008 2008. p. 1-4.
96. Li S, Gong T, Wang J, Liu R, Tan CL, Leong TY, Pang BC, Lim CCT, Lee CK, Tian Q, Zhang Z. Tbidoc: 3d content-based ct image retrieval system for traumatic brain injury. Proceedings of the SPIE 7624, Medical Imaging 2010: Computer-Aided Diagnosis, 762427 2010. p. 762427-27-10.
97. Liu R, Li S, Su B, Tan CL, Leong T-Y, Pang BC, Lim CCT, Lee CK. Automatic detection and quantification of brain midline shift using anatomical marker model. Computerized medical imaging and graphics : the official journal of the Computerized Medical Imaging Society. 2014;38(1):1-14
98. Su B, Dinh TA, Ambastha AK, Silander TV, Lu S, Pang BC, Lim CCT, Lee CK, Leong T-Y, Tan CL. Automated predication of glasgow outcome scale for traumatic brain injury. Proceedings of the 22nd International Conference on Pattern Recognition (ICPR 2014); 24-28 August; Stockholm, Sweden. 2014. p. 3245-50.

Ischemic Stroke Management

99. Dinh TA, Silander TV, Lim CCT, Leong TY. A generative model based approach to retrieving ischemic stroke images. AMIA Annu Symp Proc. 2011;2011:312-21
100. Dinh TA, Silander TV, Lim CCT, Leong TY. An automated pathological class level annotation system for 3-d brain images. AMIA Annu Symp Proc. 2012;2012:1201-10
101. Dinh TA, Silander TV, Su B, Gong T, Pang BC, Lim CCT, Lee CK, Tan CL, Leong T-Y. Unsupervised medical image classification by combining case-based classifiers. Stud Health Technol Inform. 2013;192:739-43

Dementia Management

102. Andberg S, Pillai PS, Leong T-Y. Magnetic resonance imaging (mri) image processing workbench for alzheimer's disease classification. Indian Journal of Medical Informatics. 2014 1-2 November, 2014;8(2):80-84
103. Pillai PS, Leong TY. Fusing heterogeneous data for alzheimer's disease classification. Stud Health Technol Inform. 2015;216:731-5
104. Pillai PS, Feng L, Leong TY. Knowledge-driven interpretation of multi-view data in medicine. Stud Health Technol Inform. 2018;247:745-49
105. Pillai PS, Leong TY, Alzheimer's Disease Neuroimaging I. Modeling multi-view dependence in bayesian networks for alzheimer's disease detection. Stud Health Technol Inform. 2019 Aug 21;264:358-62. 10.3233/SHTI190243

Emerging Trends and Future Directions – AI in Health, Human-Aware AI, Responsible AI

AI in Medicine and Digital Health - Paradigms, Challenges, and Opportunities - HI

106. Leong TY. Decision support systems in healthcare: Emerging trends and success factors. In: Yu X, Kacprzyk J, Carlsson C, editors. Applied decision support with soft computing: Springer-Verlag; 2003. p. 151-79.
107. Leong TY. Knowledge discovery and datamining: An integrative approach to support evidence-based medicine. Proceedings of the International Workshop on Knowledge Discovery in BioMedicine (KDbM-04); Auckland, New Zealand. 2004.
108. Druzdzal MJ, Leong T-Y. Challenges to decision support in a changing world. In anderson, m. L. Et al, reports of the 2005 aaai spring symposium series. AI Magazine. 2005 Summer 2005:87-92.
109. Leong TY, Kaiser K, Miksch S. Free and open source enabling technologies for patient-centric, guideline-based clinical decision support: A survey. Yearb Med Inform. 2007;46(Suppl 1):74-86
110. Kuhn KA, Warren JR, Leong T-Y, editors. Medinfo 2007: Proceedings of the 12 world congress on medical informatics: Building sustainable health systems. Brisbane, Australia: IOS Press; 2007.

111. Leong TY, Aronsky D, Shabot MM. Guest editorial: Computerized decision support for critical and emergency care. *Journal of Biomedical Informatics*. 2008 June 2008;41(3):409-12
112. Leong TY, Aronsky D, Shabot MM, editors. Special issue on computerized decision support for critical and emergency care. *Journal of Biomedical Informatics*. 2008 June 2008;41(3):409-98
113. Leong T-Y. Toward effective concept representation in decision support to improve patient safety. *Methods of Information in Medicine*. [Editorial]. 2010;49(6):547-49
114. Haux R, Aronsky D, Leong T-Y, McCray AT. Methods in year 50: Preserving the past and preparing for the future. . *Methods of Information in Medicine*. [Editorial]. 2011;50(1):1-6
115. Brochhausen M, Burgun A, Ceusters W, Hasman A, Leong TY, Musen M, Oliveira JL, Peleg M, Rector A, Schulz S. Discussion of "biomedical ontologies: Toward scientific debate". *Methods of Information in Medicine*. 2011;50(3):217-36
116. McCray AT, Gefeller O, Aronsky D, Leong TY, Sarkar IN, Bergemann D, Lindberg DAB, van Bommel JH, Haux R. The birth and evolution of a discipline devoted to information in biomedicine and health care as reflected in its longest running journal. *Methods of Information in Medicine*. 2011;50(6):491-507. 10.3414/me11-06-0001
117. Mitchell JA, Gerdin U, Lindberg DAB, Lovis C, Martin-Sanchez FJ, Miller RA, Shortliffe EH, Leong TY. 50 years of informatics research on decision support: What's next. *Methods of Information in Medicine*. 2011;50(6):525-35. 10.3414/me11-06-0004
118. Leong TY. Toward patient-centered, personalized and personal decision support and knowledge management: A survey. *Yearb Med Inform*. 2012;7(1):104-12
119. Haux R, Kulikowski CA, Bakken S, de Lusignan S, Kimura M, Koch S, Mantas J, Maojo V, Marschollek M, Martin-Sanchez F, Moen A, Park HA, Sarkar IN, Leong TY, McCray AT. Research strategies for biomedical and health informatics. Some thought-provoking and critical proposals to encourage scientific debate on the nature of good research in medical informatics. *Methods of Information in Medicine*. 2017 Jan 2017;56(Open):e1-e10. 10.3414/ME16-01-0125
120. Leong T-Y. Toward a collaborative ai framework for assistive dementia care. *Proceedings of the AAAI Joint Workshop on Health Intelligence (W3PHIAI'17) - co-located with the 31st AAAI Conference on Artificial Intelligence (AAAI -17)*; 4-5 February 2017; San Francisco, CA, USA. 2017.
121. Koch S, Hersh WR, Bellazzi R, Leong TY, Yedaly M, Al-Shorbaji N. Digital health during covid-19: Informatics dialogue with the World Health Organization. *Yearb Med Inform*. 2021 Apr 21. 10.1055/s-0041-1726480.

Presentations – AI in Health: Trends, Challenges, and Opportunities (Part 1)

122. Leong TY. Decision support systems in health care - an introduction. Invited lecture given at the Faculty of Medicine, National University of Singapore. Singapore. 2000.
123. Leong TY. Decision support systems in healthcare – toward evidence-based practice. Presented at the Symposium on Interoperable Medical Registry Systems. Singapore General Hospital. Singapore. January 2002.
124. Leong TY. From genes to humans: An integrated approach to biomedical computing. Presented at the MIT Lab for Computational Physiology. Cambridge, MA, USA. November 2006.
125. Leong TY. From genes to humans: A new integrated approach to biomedical computing. Presented at the Shanghai Key Laboratory of Intelligent Information Processing. Shanghai, People's Republic of China. May 2006.
126. Leong TY. Probabilistic graphical approaches to uncertainty modeling in biomedical computing. Presented at MIT Laboratory for Electromagnetic and Electronic Systems. Cambridge, MA, USA. November 2006.
127. Leong TY. Data mining in outcomes analysis: Technical issues and and practical considerations. Presented at Panel on Role and Applications of data mining in biomedical informatics: from Public Health to patient’s monitoring, from disease discovery to gene networks,. The 12th World Congress on Medical Informatics (MEDINFO 2007). Brisbane, Australia. Aug 2007.

128. Leong TY. Clinical decision support: Current trends, emerging paradigms. Presented at the Disease Management Forum, National Healthcare Group Annual Scientific Congress. Singapore. 10 November 2007.
129. Leong TY. Clinical decision systems: Current trends, emerging paradigms. Presented at East China Normal University. Shanghai, China. 19 Mar 2008.
130. Leong TY. Context-sensitive network: Toward a probabilistic graphical language for adaptive reasoning. Presented at Shanghai Key Laboratory of Intelligent Information Processing, Fudan University. Shanghai, China. 20 Mar 2008.
131. Leong TY. Mind traps: Introduction to descriptive decision theory and judgmental decision making. Presented at the Breathing Club, National University Hospital. Singapore. 23 July 2008.
132. Leong TY. Clinical decision support: Trends, paradigms, technologies. Presented at Medical Image Recognition and Annotation Group Sharing Session, Institute of Infocomm Research. Singapore. 6 Aug 2008.
133. Leong TY. Probabilistic graphical networks : Toward a new representation for real-world knowledge. Presented at NUS-Temasek Laboratories Cognitive Science Seminar. Singapore. 4 Nov 2009.
134. Leong TY. Integrating cognitive models with statistical learning in biomedical data analysis. Presented at Panel on Automated data analysis in biomedicine. The 13th World Congress on Medical Informatics (MEDINFO 2010). Cape Town, South Africa. 12-15 Sep 2010.

Presentations – AI in Health: Trends, Challenges, and Opportunities (Part 2)

135. Leong TY. Rethinking clinical decision support: New informatics paradigms for a changing world. Presented at "Biomedical Informatics: Confluence of Multiple Disciplines" Symposium. Heidelberg, Germany. 9 to 11 June 2011.
136. Leong TY. Sustainable health and biomedical computing: Challenges, opportunities, paradigms. Presented at Institute of Software Technology, United Nations University. Macau. 21 March 2012.
137. Leong TY. Toward personalized health care: Promises and pitfalls of predictive analytics. Presented at the the Singapore Health and Biomedicine Congress. Singapore. 27 - 28 Sep 2013.
138. Geissbuhler A, Kahol K, Leong T, Moidu K, Shortliffe E. Bringing theory and methods to practice: Basic and applied research in informatics. Invited Town Hall Panel Discussion at the 8th Conference of the Asia Pacific Association for Medical Informatics (APAMI 2014). New Delhi, India. 1-2 November 2014.
139. Leong TY. Rethinking medical decision support: Challenges and innovations in longterm care. Keynote Lecture Presented at Joint Conference on Medical Informatics in Taiwan (JCMIT 2014). Taipei, Taiwan, Republic of China. 15-16 November 2014.
140. Leong TY. Toward cost-effective, personalized assistive care systems: Challenges, opportunities, innovations. Invite Talk presented at the iCity R&D Roundtable Workshop, Singapore Management University. Singapore. 7 July 2014.
141. Leong TY. Collaborative opportunities – imia working groups and personalized medicine & digital health literacy Presented at "EFMI Summit at Health - Exploring Complexity: An Interdisciplinary Systems Approach (HEC 2016)". Munich, Germany. 30 August 2016.
142. Leong TY. Artificial intelligence in medicine: Challenges and opportunities in a new era. Keynote Lecture Presented at SingHealth Artificial Intelligence in Medicine Symposium (AIM 2018). Singapore. 4 April 2018.
143. Leong TY. Ai singapore: Ai in health grand challenge. Invited Talk Presented at NUS-NUHS-MIT Healthcare AI Datathon and Expo 2018. Singapore. 6 July 2018.
144. Leong T-Y. Keynote: Artificial intelligence in medicine. Plenary Keynote Address presented at the World Congress of Biomedical and Health Informatics (MEDINFO 2019) Lyon, France. 25-30 August 2019.

145. Leong TY. Ai in medicine: Challenges and opportunities. Invited panel presentation at the World Health Organization (WHO) and International Medical Informatics Association (IMIA) Dialogue Panel. 16 December 2020.
146. Leong TY. Ai and digital transformation in the covid age. Invited Panel Discussion presented at NHK World Global Agenda. NHK World Japan: NHK. 20 March 2021. Available from: <https://www3.nhk.or.jp/nhkworld/en/ondemand/video/2047060/>.

Biomedical and Health Informatics – General Editorials – HI

147. Aronsky D, Haux R, Leong TY, McCray A. Editorial: The student editorial board of methods of information in medicine--an opportunity to educate tomorrow's peer reviewers. *Methods of Information in Medicine*. 2007;46(6):623-24
148. Haux R, Aronsky D, Leong TY, McCray A. Methods extends free access to papers and offers optional open access model: New services and opportunities for authors and readers . *Methods of Information in Medicine*. 2010;49(1):1-2
149. Aronsky D, Leong TY. Medinfo2013: Join the international biomedical and health informatics community in copenhagen. *Methods Inf Med*. 2012;51(5):369-70
150. Aronsky D, Leong TY. From the scientific program chairs. Preface. *Stud Health Technol Inform*. 2013;192:v

Tutorials and Short Courses – Writing for Publication in Biomedical Informatics

151. Aronsky D, Talmon J, Leong T-Y, Haux R, Safran C. Writing for publication in biomedical informatics. Workshop presentation at the 12th World Congress on Medical Informatics (MEDINFO 2007). Brisbane, Australia. Aug 2007.
152. Aronsky D, Leong TY, Talmon J, Haux R, Safran C. Writing for publication in biomedical informatics. *AMIA Annu Symp Proc*. 2008 Nov 06:1229-32
153. Aronsky D, Talmon J, Leong T-Y, Haux R, Safran C. Writing for publication in biomedical informatics. Tutorial presentation at the 13th World Congress on Medical Informatics (MEDINFO 2010). Cape Town, South Africa. Aug 2010.

Creating the Future with Human-Aware Artificial Intelligence – AI

Presentations

154. Leong TY. The future economy: Digital, jobs, and education - panel discussion. Presented at An Evening Dialogue on Technology, Jobs and Education, organized by YTL Foundation and Singapore Management University. Kuala Lumpur, Malaysia. 21 October 2016.
155. Leong TY. Ai and urban living: Challenges and opportunities - panel discussion. Presented at AI Expert Panel at Smart ABC (Artificial Intelligence-Banking-Cities) Forum at ITU World 2017 Busan, Korea. 25-26 September 2017.
156. Leong TY. Ai for smarter citizens in smarter cities - panel discussion. Presented at AI Crosssectorial Debate at Smart ABC (Artificial Intelligence-Banking-Cities) Forum at ITU World 2017 Busan, Korea. 25-26 September 2017.
157. Leong TY. Creating a better future with ai: A singapore vision. Presented at NUS Greater Good Series Talk on Artificial Intelligence and Cybersercurity. Singapore. 18 January 2018.
158. Leong TY. From research to innovation - roundtable discussion. Presented at Singapore-France Year of Innovation Roundtable Discussion hosted at NUS, with visit from the French Minister for Research, Higher Education, and Innovation Singapore. 23 January 2018.

159. Leong TY. Creating a better future with artificial intelligence. Presented at River Valley High School Y.LEAD Seminar 2018 Panel. Singapore. 7 March 2018.
160. Leong TY. Competition vs. Cooperation: Stakes in ai race - panel discussion. Presented at GLOBESEC 2018 Bratislava Forum. Bratislava, Slovakia. 17-19 May 2018.
161. Leong TY. Ai singapore: An introudction. Presented at Global Data Science Institute Directors Rountable organized by the Alan Turing Institute and the Imperial College London Data Science Institute, co-located with Knowledge Discovery and Datamining Conference (KDD 2018). London, UK. 20 August 2018.
162. Leong TY. Singapore AI initiative. Presented at Global AI Initiatives Event, co-located with Knowledge Discovery and Datamining Conference (KDD 2018). London, UK. 22 August 2018.
163. Leong TY. Global ai initiatives - how to create policies around investment in ai research and education, social policies such as in security, privacy and safety issues of ai - panel discussion. Presented at Global AI Initiatives Event, co-located with Knowledge Discovery and Datamining Conference (KDD 2018). London, UK. 22 August 2018.
164. Leong TY. The future of work: Ai for hire panel (moderator). Presented at SGInnovate Deep Tech Summit. Marina Bay Sands Expo and Convention Center, Singapore. 18 September 2018.
165. Leong TY. The role of research universities in advancing artificial intelligence. Presented at Elsevier AI Breakfast Session, co-located with Times Higher Education (THE) World Academic Summit in Singapore 2018. Singapore. 27 September 2018.
166. Leong TY. National r&d and promotional strategies for ai: Approaches and lessons to date? The singapore perspective. Presented Oslo Met University/OECD workshop on digital technology for science and innovation – Emerging topics for policy and assessment. Olso, Norway. 4-8 Nov 2018.

Responsible AI – Ethics, Governance, and Regulatory Considerations in AI – AI and HI

Policy work

167. WHO. Ethical considerations to guide the use of digital proximity tracking technologies for covid-19 contact tracing: Interim guidance 28 may. World Health Organization; 2020.
168. WHO. World health organization (who) guidance on ethics & governance of ai for health. World Health Organization; 2021.

Presentations and Panel Discussions

169. Leong TY. Regulating ai - better safe than sorry? - panel discussion. Presented at The Economist Innovation Summit Asia 2018. Hong Kong 6 September 2018.
170. Leong TY. Keynote session on ai and ethics: Toward a culture of human aware ai: A singapore perspective. Lightning keynote presentation at the Times Higher Education (THE) Innovation Summit, KAIST. Daejeong, South Korea 2-4 April 2019. Available from: Summit: : <https://www.timeshighereducation.com/policy/innovation-impact-summit> Videos: <https://event.worktimetv.com/innovation-and-impact-summit-2019>
171. Leong TY. Keynote session on ai and ethics: Who is responsible? The ethics and societal implications of artificial intelligence - panel discussion. Keynote panel presentation at the Times Higher Education (THE) Innovation Summit, KAIST. Daejeong, South Korea 2-4 April 2019. Available from: Summit: : <https://www.timeshighereducation.com/policy/innovation-impact-summit> Videos: <https://event.worktimetv.com/innovation-and-impact-summit-2019>
172. Leong TY. Toward responsible ai in health: Technical perspectives on ethical and governance considerations. Invited Presentation at the WHO Expert Group Meeting on Guidance on Ethics and Governance of AI in Health 8 Septembter 2020.

Tutorials and Short Courses –Ethics, Governance, and Regulatory Considerations in AI

173. Leong TY. Toward responsible ai: Ethical, governance, and regulatory considerations and decisions. Invited Lecture at AI Summer School 2020 organized by AI Singapore. Singapore. 3 August 2020.

Interviews and Media Reports - General

174. [Interview]. A woman in a digital world. NUS News Website 2018 [updated 31 July 2018]; Available from: <https://news.nus.edu.sg/a-woman-in-a-digital-world/>.
175. [Interview]. Growing the AI ecosystem. The Edge Singapore. 2019 7 October 2019:14.
176. [Interview]. Embracing AI in singapore. Asian Scientist. 2019 January 2019.
177. [Interview]. Tze-yun leong: The need for intelligent regulation. Bull World Health Organ. 2020 Apr 1;98(4):237-38. 10.2471/BLT.20.030420.
178. [Interview]. Leong tze yun: Creating human-aware artificial intelligence. NUS School of Computing Website.2021 [updated 21 May 2021]; Available from: <https://www.comp.nus.edu.sg/news/features/2021-human-aware-ai-tze-yun/>.

Selected Posters and Abstracts at Conferences and Workshops (Refereed) - HI

179. Leong TY. A general framework for dynamic decision analysis in medicine. Proceedings of the Symposium on Computer Applications in Medical Care (SCAMC) 1995. p. 964.
180. Cao CG, Leong T-Y. Learning conditional probabilities for dynamic influence structures in medical decision models. Proc AMIA Symp. 1997:848.
181. Lin L, Poh KL, Leong T-Y, T. K. Lim. Management of spontaneous pneumothorax: A decision analysis. Proceedings of the The 7th Congress of the Asian Pacific Society of Respiratory - APSR; October 24-27, 2002; Taipei, Taiwan. 2002. p. 134.
182. Lin L, Poh KL, Leong TY, Lim TK. Optimal time for surgical intervention in the management of spontaneous pneumothorax: A decision analysis. Proceedings of the International Conference on Evidence-based Medicine (ICEBM); Singapore. 2003. p. 67.
183. Li XL, Leong TY. A support vector machine approach to solving the breast cancer diagnosis problem (abstract). Stud Health Technol Inform. 2004:1917.
184. Li G, Leong TY. A feature-based data mining approach to improve translation initiation site prediction (abstract). Stud Health Technol Inform. 2004.
185. Lin L, Wong LS, Leong TY, Lai PS. Mining of disease associated haplotype patterns for hemophilia a. Proceedings of the Asia-Pacific Conference on Human Genetics (HUGO2004); 17-20 November 2004; Biopolis, Singapore. 2004.
186. Pillai PS, Feng L, Leong T-Y. Identifying the risk factors of elderly cognitive impairment using feature selection and association: Findings from a singapore cross-sectional study (abstract). Proceedings of the Health - Exploring Complexity: An Interdisciplinary Systems Approach (HEC 2016); 28 Aug to 2 Sep 2016; Munich, Germany. 2016.
187. Ambastha AK, Leong TY, Alzheimer's Disease Neuroimaging I. A deep learning approach to neuroanatomical characterisation of alzheimer's disease (abstract). Stud Health Technol Inform. 2017;245:1249.
188. Pillai PS, Leong TY. Knowledge-driven generative subspaces for modeling multi-view dependencies in medical data. Proceedings of the NeurIPS 2018 Workshop on ML4H: Machine Learning for Health; 8 December 2018; Montreal, Canada. 2018.