

Curriculum Vitae

Name: LEOW Wee Kheng

Appointment: Associate Professor, Dept. of Computer Science, School of Computing, NUS

Office Address: School of Computing, National University of Singapore, Computing 1, 13
Computing Drive, Singapore 117417

Office Phone: 65166540

Email: leowwk@comp.nus.edu.sg

Webpage: www.comp.nus.edu.sg/~leowwk

Educational Qualifications:

- Ph.D. Computer Science, The University of Texas at Austin, 1994
- M.Sc. Computer Science, National University of Singapore, 1989
- B.Sc. Computer Science, National University of Singapore, 1985

Work Experience:

- Associate Professor, 1 Jan 2002 – present
Assistant Professor, 1 Aug 1998 – 31 Dec 2001
Lecturer, 1 Mar 1995 – 31 July 1998
Department of Computer Science, School of Computing,
National University of Singapore
- Software Engineer, Jun 1992 – Nov 1993
Pavilion Technologies, Inc., Austin, Texas, USA
- Research Assistant, Jan 1989 – May 1992
Microelectronics and Computer Technology Corporation, Austin, Texas, USA
- Teaching Assistant, 8 July 1985 – 31 Aug 1988
Dept. of Information Systems and Computer Science,
National University of Singapore

RESEARCH

1. Research Interests

Computer vision, medical image analysis, surgery simulation and planning

2. Research Grants Awarded

source	grant number	project title	duration	amount
NUS ARF	RP950656	Neural network visual processing system	Jan 1996 – Jan 1999	\$49,300
NUS ARF	R-252-000-037-112	Modeling the development of visual search strategies in reading	Aug 1998 – Aug 2001	\$89,450
NUS ARF	R-252-000-049-112	Development and application of uniform texture space	Dec 1998 – Nov 2001	\$39,000

NSTB, MOE	R-252-000- 072-112/303	Digital Image and Video Album (collaborator)	Jan 2000 – Jul 2003	\$1.24 million
NUS ARF	R-252-000- 018-112	Trainable Computer Vision Systems for Surveillance and Mobile Robot Control	Jan 1997 – Dec 2002	\$238,865
NMRC	NMRC/0482/ 2000	Pattern analysis & machine intelligence in the detection of fractures in digital radiology	Mar 2001 – Mar 2003	\$59,440
NUS ARF	R-252-000- 137-112	Indexing, Matching, and Retrieval of 3D Model	Dec 2002 – Dec 2006	\$205,794
NMRC	NMRC/0759/ 2003	Automated Computer Detection of Fractures in X-Rays	Aug 2003 – July 2006	\$213,400
EDB, ResultSmith	R-252-000- 264-592	Golf Coaching through 3G Cellphone	May 2006 – Mar 2007	\$26,596
A*STAR SERC	SERC 052 101 0103	MMedWeb - Multimedia Medical Conceptual Web for Intelligent Information Access	Jul 2007 – Jun 2010	\$530,840
NUS ARF	R-252-000- 293-112	Atomistic Computational Modeling of Protein-Protein Interactions with Applications to WW Domains	Feb 2007 – Feb 2009	\$87,000
A*STAR SBIC	SBIC RP C- 008/2006	Segmentation, structural modelling and simulation of the aorta and liver for clinical decision-making and treatment planning	Feb 2007 – Jan 2010	\$761,000
MOE Tier 2	MOE2014- T2-1-062	Unified Approach for Cleaning, Modelling and Completion of Complex Visual Data	Nov 2014 – Oct 2017	\$412,975

3. Multi-Disciplinary Research Collaborators

- Joint modeling, fracture detection, scoliosis assessment.
Dr. Howe Tet Sen, Dept. of Orthopaedic Surgery, Singapore General Hospital
- Craniomaxillofacial surgery planning
A/Prof. Lim Thiam Chye, Division of Plastic, Reconstructive and Aesthetic Surgery,
Department of Surgery, National University Hospital.
- Breast cancer grading, MMedWeb.
A/Prof. Thomas Putti, Dept. of Pathology, National University Hospital.
- Heart surgery simulation and planning.
Prof. Ing-Sh Chiu, Dept. of Cardiac Surgery, National Taiwan University Hospital.
- Stroke Analysis
A/Prof. Vijay Kumar Sharma, Division of Neurology, Department of Medicine, National
University Hospital.

- Dr. Leonard Yeo, Division of Neurology, Department of Medicine, National University Hospital.

4. Patents

Patents Granted

- K. H. Lim, C. L. Goh, W. K. Leow, X.-W. Aw. Method of Analysing Skin Images Using a Reference Region to Diagnose a Skin Disorder. Singapore Patent 166595, granted on 15 Jan 2013.
- W. K. Leow, D. Yap, T. S. Howe, M. A. Png. Method and Systems for Detection of Bone Fractures. US 8064660 B2, granted on 22 Nov. 2011.
- W. K. Leow, Z. Huang, L. Zhou, I. Atmosukarto. Frontier Advancing Polygonization. US 7091969 B2, granted on 15 Aug 2006.
- W. K. Leow, S. Y. Lai. Invariant Texture Matching for Image Retrieval. US 6192150 B1, granted on 20 Feb 2001.

Patents Published

- Y. Cheng, W. K. Leow, T. C. Lim. Computer-Aided Planning of Craniomaxillofacial and Orthopedic Surgery. PCT WO 2015/142291 A1, published on 20 Sep 2015.
- K. H. Lim, C. L. Goh, W. K. Leow, X.-W. Aw. Skin Analysis System, PCT WO 2009/145735 A1, published on 3 Dec 2009.
- W. K. Leow, R. Wang, C.-S. M. Lee, D. Xing, H. W. Leong. Human Motion Analysis System and Method. PCT WO 2009/061283 A2, published on 14 May 2009.
- W. K. Leow, D. Yap, T. S. Howe, M. A. Png. Method and System for Detection of Bone Fractures. US 2007/0274584 A1, published on 29 Nov 2007.
- W. K. Leow, D. Yap, T. S. Howe, M. A. Png. Method and System for Detection of Bone Fractures. PCT WO 2005/083635 A1, published on 9 Sep 2005.

Patents Filed

- S. Xie, W. K. Leow, T. C. Lim. Non-Rigid Registration of Complex 3D Models with Flip-Avoiding Interpolating Surface and Reconstruction of Skull Models for Craniomaxillofacial Surgery Planning, Forensic Investigation and Anthropological Study, Singapore Patent 10201610236W, filed on 6 Dec 2017.
- Y. Cheng, W. K. Leow, T. C. Lim. Computer-Aided Planning of Craniomaxillofacial and Orthopedic Surgery, PCT/SG2015/050045, filed on 20 Mar 2015.
- Y. Cheng, W. K. Leow, T. C. Lim. Computer-Aided Planning of Craniomaxillofacial and Orthopedic Surgery. Singapore provisional application, S/No.10201400827T, filed on 20 Mar 2014.
- W. K. Leow, H. Li, I.-S. Chiu, H. L. Leo, T. Tang. Computer-Assisted Simulation, Planning and Evaluation of Complex Cardiac Surgeries. Provisional US patent, filed on 21 Sep 2009.
- K. H. Lim, C. L. Goh, W. K. Leow, X.-W. Aw, System and Method for Acquisition, Analysis, Visualization, and Storage of Facial Images for Computer-Aided Dermatological Diagnosis and Treatment. Provisional US patent, filed on 29 May 2008.
- W. K. Leow, R. Wang, C.-S. M. Lee, D. Xing, H. W. Leong. System and Method for 3D Human Motion Analysis from 2D Video. Provisional US patent, filed on 9 Nov 2007.

5. Academic Recognition

- Conference Program Committee / Technical Committee Member
 - SinFra '09, Program Committee Co-chair
 - Int. Conf. on Image and Video Retrieval 2005, Program Committee Co-Chair
 - Int. Conf. on Multimedia Modeling, 2000
 - Int. Conf. on Distributed Multimedia Systems, 2002, 2003, 2004
 - Int. Conf. on Multimedia and Exposition, 2004
 - Asian. Conf. on Computer Vision, 2006, 2007
 - Pacific Rim Conference on Artificial Intelligence, 2006
 - Int. Conf. on Computer Vision, 2007
 - HealthCom 2007
 - VISUAL 2007

- Conference Session Chair
 - IEEE Int. Conf. on Robotics and Automation, 2003
 - Computer Graphics International, 2013

- Conference Organizing Committee Member
 - Int. Conf. on Multimedia and Expo, 2004
 - Int. Conf. on Multimedia Modeling, 1997, 2000
 - Pacific Graphics, 1998
 - RoboCup (held in conjunction with PRICAI), 1997

- Paper Review
 - Int. Conf. on Multimedia Modeling, 1997, 2000
 - Int. Conf. on Distributed Multimedia Systems, 2002, 2003, 2004
 - Int. Conf. on Multimedia and Exposition, 2004
 - Int. Conf. on Image Processing, 2004, 2011, 2014, 2015, 2016, 2017
 - Int. Conf. on Pattern Recognition, 2012, 2014, 2016
 - Pacific Rim Int. Conf. on Artificial Intelligence, 2000
 - Asia Pacific Software Engineering Conference 2000
 - Asian. Conf. on Computer Vision, 2006, 2010, 2012, 2014
 - Pacific Rim Conf. on Artificial Intelligence, 2006
 - International Conf. on World Wide Web, 2006
 - IEEE Int. Conf. on Computer Vision and Pattern Recognition, 2009, 2016
 - Int. Conf. on Computer Vision, 2009, 2015, 2017
 - European Conf. on Computer Vision, 2016
 - Int. Conf. on Medical Image Computing and Computer Assisted Intervention, 2007, 2017
 - IEEE Trans. on Neural Networks
 - IEEE Trans. on Multimedia
 - IEEE Trans. on Circuits and Systems for Video Technology
 - IEEE Trans. on Mobile Computing
 - IEEE Trans. on Knowledge and Data Engineering
 - IEEE Trans. on Medical Imaging
 - IEEE Trans. on Image Processing
 - Pattern Recognition Letters

- Journal of Visual Computer
- Journal of Pattern Analysis and Application
- Journal of Visual Communication and Image Representation
- Pattern Analysis & Applications Journal
- Invited Talk
 - 2nd Singapore Bioimaging Consortium Workshop, 2006
 - Academia Sinica, Taiwan
 - Dept. of Computer Science and Information Engineering, National Taiwan University
 - Dept. of Diagnostic Radiology, National Taiwan University Hospital
 - 9th Korea-Singapore Joint Workshop on Bioinformatics and NLP
 - 16th Annual Scientific Meeting of the Singapore Radiological Society, 2007
- Invited to serve as Associate Editor for Pattern Recognition journal.

SERVICES

1. School Committees

- Lecturer Representative, Executive Committee of Dept. of Information Systems and Computer Science / School of Computing: July 1997 – June 1998
- School Curriculum Committee Member: Apr 1998 – 2000
- Contributed to the revision of the curricula for Software Engineering, Artificial Intelligence, and Computer Engineering.
- Communications and Media Programme (B.Comp. CM) Committee Member: 2001 – present
- Graduate Studies Committee Member: 2001 – 2005
- Curriculum Chair, Computer Science Dept.: Aug 2005 – present
- Exco Member, Computer Science Dept. Aug 2005 – present
- Contributed to the revision of various CS programmes and modules.
- Manage the revision and administration of CS modules.

2. Centre Director / Laboratory Coordinator

- Coordinator, Intelligence Systems Lab: 1998, 1999
- Coordinator, Artificial Intelligence Teaching Lab: Jan 2000 – July 2001
- Associate Director, Centre for Information Mining and Extraction: Aug 1999 – 2005
- Coordinator, Computer Vision Research Lab: 2005 – 2010

3. Others

- Organized National IT Awareness (NITA) Project Competition and Demonstration, 2003, 2004 (to promote SoC programmes to JC students and to encourage SoC students to excel in their research projects)
- Visited Junior Colleges to promote SoC undergraduate programmes.
- Served as examiners and graduate committee members for 5 graduate students.
- Meet representatives of EDB, IDA, MDA to discuss educational and research collaborations.
- Interview SM2/SM3 students in China.
- Performed peer review of teaching performance.

4. Honours and Awards:

- Awarded DPMA Gold Medal and Prize, 1985 (NUS)
- Awarded Jurong Shipyard Book Prize, 1985 (NUS)
- Elected member of Phi Kappa Phi and Alpha Beta Phi
- Invited to contribute an article to *The Handbook of Brain Theory and Neural Networks*, M. A. Arbib (Ed.), MIT Press, 1995.
- 2007 Andrew P. Sage Best Transactions Paper Award for the best paper published in all 3 SMC Transactions, Part A, Part B, and Part C, in 2006.

Complete Publication List

1. S. Xie, W. K. Leow and T. C. Lim. Improved Laplacian Deformation for Reconstruction of Defective Skulls. In *Proc. Int. Conf. on Computer Analysis of Images and Patterns*, Aug 2017.
2. Jian Lai, Wee Kheng Leow, Terence Sim, and Guodong Li. Multi-View Separation of Background and Reflection by Coupled Low-Rank Decomposition. In *Proc. Int. Conf. on Computer Analysis of Images and Patterns*, Aug 2017.
3. A. A. Abuolaim, W. K. Leow, J. Varadarajan, and N. Ahuja. On the Essence of Unsupervised Detection of Anomalous Motion in Surveillance Videos. In *Proc. Int. Conf. on Computer Analysis of Images and Patterns*, Aug 2017.
4. S. Xie and W. K. Leow. Flip-Avoiding Interpolating Surface Registration for Skull Reconstruction. In *Proc. Int. Conf. on Pattern Recognition*, Dec 2016.
5. L. L. L. Yeo, P. Paliwal, H. L. Teoh, R. C. Seet, D. Soon, R. Rathakrishnan, V. Ong, T. H. Lee, H. F. Wong, B. P. L. Chan, W. K. Leow, Y. Cheng, E. Ting, A. Gopinathan, W. Y. Tan, V. K. Sharma. Intravenous Thrombolysis for Acute Ischemic Stroke due to Cervical Internal Carotid Artery Occlusion. *J. Stroke and Cerebrovascular Diseases*, 2016.
6. J. Lai, W. Leow, T. Sim, V. Sharma. Think Big, Solve Small: Scaling Up Robust PCA with Coupled Dictionaries. In *Proc. IEEE Winter Conf. on Applications of Computer Vision*, Mar 2016.
7. W. K. Leow, G. Li, J. Lai, T. Sim, V. Sharma. Hide and Seek: Uncovering Facial Occlusion with Variable-Threshold Robust PCA. In *Proc. IEEE Winter Conf. on Applications of Computer Vision*, Mar 2016.
8. K. Zhang, W. K. Leow, Y. Cheng. Performance Analysis of Active Shape Reconstruction of Fractured, Incomplete Skulls. In *Proc. Int. Conf. on Computer Analysis of Images and Patterns*, Sep 2015.
9. Y. Cheng, S. Xie, W. K. Leow, K. Zhang. Plane-Fitting Robust Registration for Complex 3D Models. In *Proc. Int. Conf. on Computer Analysis of Images and Patterns*, Sep 2015.
10. J. Lai, W. K. Leow, T. Sim. Incremental Fixed-Rank Robust PCA for Video Background Recovery. In *Proc. Int. Conf. on Computer Analysis of Images and Patterns*, Sep 2015.
11. L. L. L. Yeo, P. Paliwal, H. L. Teoh, R. C. Seet, B. P. Chan, E. Ting, N. Venketasubramanian, W. K. Leow, B. Wakerley, Y. Kusama, R. Rathakrishnan, V. K. Sharma. Assessment of Intracranial Collaterals on CT Angiography in Anterior Circulation Acute Ischemic Stroke. *American Journal of Neuroradiology*, 36:289-94, Feb 2015.

12. K. Zhang, Y. Cheng, W. K. Leow. Dense Correspondence of Skull Models by Automatic Detection of Anatomical Landmarks. In *Proc. Computer Analysis of Images and Patterns*, Aug 2013.
13. W. K. Leow, Y. Cheng, L. Zhang, T. Sim, L. Foo. Background Recovery by Fixed-rank Robust Principal Component Analysis. In *Proc. Computer Analysis of Images and Patterns*, Aug 2013.
14. L. Zhang, S. Zhu, T. Sim, W. K. Leow, H. Najati. Hearing versus Seeing Identical Twins. In *Proc. Computer Analysis of Images and Patterns*, Aug 2013.
15. C. Zhu, W. K. Leow. Textured Mesh Surface Reconstruction of Large Buildings with Multi-View Stereo. *Visual Computer*, 29(6), June 2013, pages 609-615.
16. C. Zhu, W. K. Leow. Textured Mesh Surface Reconstruction of Large Buildings with Multi-View Stereo. In *Proc. Computer Graphics International*, June 2013.
17. W. K. Leow, R. Wang and H. W. Leong. 3-D-2-D Spatiotemporal Registration for Sports Motion Analysis. *Machine Vision and Applications*, 23(6), 2012, pages 1177-1194.
18. Y. Cheng, W. K. Leow and T. C. Lim. Automatic Identification of Frankfurt Plane and Mid-Sagittal Plane of Skull. In *Proc. IEEE Workshop on Applications of Computer Vision*, 9-11 Jan 2012.
19. H. Li, W. K. Leow, and I.-S. Chiu. Elastic Tubes: Modeling Elastic Deformation of Hollow Tubes. *Computer Graphics Forum*, 29(6), 2010, pages 1770-1782.
20. H. Li, W. K. Leow, and I.-S. Chiu. Elastic Tubes: Modeling Elastic Deformation of Hollow Tubes. *Computer Graphics Forum*, 29(6), 2010, pages 1770-1782.
21. F. Ding, W. Yang, W. K. Leow, S. Venkatesh. Segmentation of Soft Organs by Flipping-Free Mesh Deformation. In *Proc. IEEE Workshop on Applications of Computer Vision*, 7-8 Dec 2009.
22. J.-R. Dalle, C.-H. Huang, W. K. Leow, D. Racoceanu, T. C. Putti. Nuclear Pleomorphism Scoring by Selective Cell Nuclei Detection. In *Proc. IEEE Workshop on Applications of Computer Vision*, 7-8 Dec 2009.
23. F. Ding, H. Li, Y. Chen, W. K. Leow. Medical Volume Image Summarization. In *Proc. IEEE Workshop on Applications of Computer Vision*, 7-8 Dec 2009.
24. F. Ding, W. K. Leow, S. Venkatesh. Removal of Abdominal Wall for 3D Visualization and Segmentation of Organs in CT Volume. In *Proc. Int. Conf. on Image Processing*, 7-11 Nov 2009.
25. H. Li, W. K. Leow, and I.-S. Chiu. Predictive Simulation of Bidirectional Glenn Shunt Using a Hybrid Blood Vessel Model. In *Proc. Int. Conf. on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Part II, LNCS 5762, pages 266-274, 20-24 Sep 2009.
26. H. Lu, H. Li, S. B. B. S. Rashid, W. K. Leow and Y.-C. Liou. Knowledge-Guided Docking of WW Domain Proteins and Flexible Ligands. In *Proc. IAPR Int. Conf. on Pattern Recognition in Bioinformatics*, 7-9 Sep 2009.
27. L. Roux, A. Tutac, A. Veillard, N. Lomenie, D. Racoceanu, W. K. Leow, J. Klossa, T. Putti. A Cognitive Virtual Microscopic Framework for Knowledge-Based Exploration of Large Microscopic Images in Breast Cancer Histopathology. In *Proc. Int. Conf. of IEEE Engineering in Medicine and Biology Society*, 2-6 Sep 2009.

28. H. Li, W. K. Leow, C.-H. Huang, and T. S. Howe. Modeling and Measurement of 3D Deformations of Scoliotic Spine Using 2D X-ray Images. In *Proc. Computer Analysis of Images and Patterns*, pages 647-654, 2-4 Sep 2009.
29. C.-H. Huang, W. K. Leow, D. Racoceanu. The Cellular Neural Network as a Principal Component Analyzer. In *Proc. Int. Joint Conf. Neural Networks*, 14-19 June 2009.
30. A. E. Tutaca, D. Racoceanu, W. K. Leow, H. Müller, T. Puttib, V. Cretud. Toward Translational Incremental Similarity-Based Reasoning in Breast Cancer Grading. In *Proc. SPIE*, 2009.
31. H. Li, W. K. Leow, Y. Qi, and I.-S. Chiu. Predictive Surgical Simulation of Aorta Reconstruction in Cardiac Surgery. In *Proc. Int. Conf. on Medicine Meets Virtual Reality*, 19-22 Jan 2009.
32. H. Li, W. K. Leow, and I.-S. Chiu. Modeling Torsion of Blood Vessels in Surgical Simulation and Planning. In *Proc. Int. Conf. on Medicine Meets Virtual Reality*, 19-22 Jan 2009. 2008
33. H. Li and W. K. Leow. Predictive Surgical Simulation for Planning Cardiac Surgeries. *Innovation*, 8(2): 32-33, 2008.
34. H. Lu, B. Zhang, Y. Wang, and W. K. Leow. iDVT: An Interactive Digital Violin Tutoring System Based on Audio-Visual Fusion. In *Proc. ACM Int. Conf. on Multimedia* (short paper), 27 Oct-1 Nov 2008.
35. W. K. Leow, C.-C. Chiang, and Y.-P. Hung. Localization and Mapping of Surveillance Cameras in City Map. In *Proc. ACM Int. Conf. on Multimedia*, 27 Oct 27-1 Nov 2008.
36. A. E. Tutac, D. Racoceanu, W. K. Leow, J.-R. Dalle, T. Putti, W. Xiong, V. Cretu. Translational Approach for Semi-Automatic Breast Cancer Grading Using a Knowledge-Guided Semantic Indexing of Histopathology Images. In *Proc. Int. Conf. on Medical Image Computing and Computer Assisted Intervention Workshop*, 6-10 Sep 2008.
37. Y. Qi, W. Xiong, W. K. Leow, Q. Tian, J. Zhou, J. Liu, H Thazin, K. V. Sudhakar, and S. C. Wang, Semi-automatic Segmentation of Liver Tumors from CT Scans Using Bayesian Rule-based 3D Region Growing. In *Proc. Int. Conf. on Medical Image Computing and Computer Assisted Intervention Workshop*, 6-10 Sep 2008.
38. J. Zhou, W. Xiong, Q. Tian, Y. Qi, J. Liu, W. K. Leow, H. Thazin, K. V. Sudhakar, and S. C. Wang, Semi-automatic segmentation of 3D liver tumors from CT scans using voxel classification and propagational learning. In *Proc. Int. Conf. on Medical Image Computing and Computer Assisted Intervention Workshop*, 6-10 Sep 2008.
39. J.-R. Dalle, W. K. Leow, D. Racoceanu, A. E. Tutac, T. C. Putti. Automatic Breast Cancer Grading of Histopathological Images. In *Proc. Int. Conf. of IEEE Engineering in Medicine and Biology Society*, 20-24 Aug 2008.
40. R. O. Teodorescu, C. Cernazanu-Glavan, V. I. Cretu, and D. Racoceanu. The use of the medical ontology for a semantic-based fusion system in biomedical informatics. In *Proc. IEEE Int. Conf. on Intelligent Computer Communication and Processing*, vol. 1, pages 265-268, August 2008.
41. R. O. Teodorescu, V. I. Cretu, and D. Racoceanu. The use of medical ontology in a semantic-based fusion system. In *Proc. The 8th Int. Conf. on Technical Informatics*, vol. 1, 48-52, June 2008.

42. R. Wang, W. K. Leow, and H. W. Leong. 3D-2D Spatiotemporal Registration for Sports Motion Analysis. In *Proc. IEEE Conf. on Computer Vision and Pattern Recognition*, 24-26 Jun 2008.
43. A. E. Tutac, D. Racoceanu, T. Putti, W. Xiong, W. K. Leow, and V. Cretu. Knowledge-Guided Semantic Indexing of Breast Cancer Histopathology Images. In *Proc. Int. Conf. on Biomedical Engineering and Informatics (BMEI)*, 27-30 May 2008.
44. H. Li, W. K. Leow, I.-S. Chiu, and S.-C. Huang. Deformation and Smooth Joining of Mesh Models for Predictive Cardiac Surgical Simulation. In *Proc. Int. Conf. on Geometric Modeling and Processing*, 23-25 April 2008.
45. W. Xiong, J. Zhou, Q. Tian, J. Liu, Y. Qi, W. K. Leow, H. Thazin, and S. C. Wang. Performance benchmarking of liver CT image segmentation and volume estimation. In *Proc. of SPIE*, vol. 6919, (SPIE Medical Imaging), 16–21 Feb 2008.
46. C.-C. Chiang, M.-W. Hung, Y.-P. Hung, and W. K. Leow. Image Annotation with Relevance Feedbacks Using a Semi-Supervised and Hierarchical Approach. In *Proc. of 3rd Int. Conf. on Computer Vision: Theory and Applications (VisApp)*, 22-25 Jan 2008.
47. R. Teodorescu, D. Racoceanu, W. K. Leow and V. Cretu. Prospective Study for Semantic Inter-Media Fusion in Content-Based medical Image Retrieval, *Medical Imaging Technology*, Vol. 26, No. 1, January 2008, pages 48-58.
48. B. Zhang, Y. Wang, and W. K. Leow. Visual Analysis of Fingering for Pedagogical Violin Transcription. In *Proc. of ACM Multimedia* (short paper), 2007.
49. F. Ding, W. K. Leow, and T. S. Howe. Automatic Segmentation of Femur Bones in Anterior-Posterior Pelvis X-ray Images. In *Proc. Int. Conf. on Computer Analysis of Images and Patterns*, 2007, 205-212.
50. J. Congfu He, W. K. Leow, and T. S. Howe. Hierarchical Classifiers for Detection of Fractures in X-Ray Images. In *Proc. Int. Conf. on Computer Analysis of Images and Patterns*, 2007, pp. 962-969.
51. J. Tedjokusumo and W. K. Leow. Normalization and Alignment of 3D Objects Based on Bilateral Symmetry Planes. In *Proc. Int. Conf. on Multimedia Modeling, LNCS 4351, Part I*, pp. 74–85, 2007.
52. P. K. Bhunre, W. K. Leow, T. S. Howe. Recovery of 3D Pose of Bones in Single 2D X-ray Images. In *Proc. IEEE Workshop on Applications of Computer Vision*, 2007.
53. R. Wang and W. K. Leow. Human Posture Analysis under Partial Self-occlusion. In *Proc. Int. Conf. on Image Analysis and Recognition*, 2006.
54. K. H. Low, W. K. Leow, M. H. Ang, Jr., Autonomic Mobile Sensor Network with Self-Coordinated Task Allocation and Execution, *IEEE Trans. on Systems, Man, and Cybernetics - Part C: Applications and Reviews*, 36(3):315-327, 2006.
55. X. Zhang, H. Li, Y. Qi, W. K. Leow, T. K. Ng. Rain Removal in Video by Combining Temporal and Chromatic Properties, In *Proc. Int. Conf. on Multimedia and Expo*, 2006.
56. W.-K. Leow, M. S. Lew, T.-S. Chua, W.-Y. Ma, L. Chaisorn, E. M. Bakker, editor, *Image and Video Retrieval, Proc. 4th Int. Conf. on Image and Video Retrieval (CIVR 2005)*, LNCS 3568. Springer, 2005.
57. F. Ding, W. K. Leow, S.-C. Wang. Segmentation of 3D CT Volume Images Using a Single 2D Atlas. In *Proc. First International Workshop on Computer Vision for Biomedical Image*

- Applications (CVBIA 2005), LNCS 3765, (in conjunction with Int. Conf. on Computer Vision, 2005), pages 459-468, Springer, 2005.*
58. Y. Chen, X. Ee, W. K. Leow, T. S. Howe. Automatic Extraction of Femur Contours from Hip X-ray Images. In *Proc. First International Workshop on Computer Vision for Biomedical Image Applications (CVBIA 2005), LNCS 3765, (in conjunction with Int. Conf. on Computer Vision, 2005), pages 200-209, Springer, 2005.*
 59. R. Wang and W. K. Leow. Human Posture Sequence Estimation Using Two Un-calibrated Cameras. In *Proc. British Machine Vision Conference, 2005.*
 60. V. L. F. Lum, W. K. Leow, Y. Chen, T. S. Howe, M. A. Png. Combining Classifiers for Bone Fracture Detection in X-Ray Images. In *Proc. Int. Conf. on Image Processing, 2005.*
 61. R. Wang and W. K. Leow. Human Body Posture Refinement by Nonparametric Belief Propagation. In *Proc. Int. Conf. on Image Processing, 2005.*
 62. W. Huang, C. L. Tan, W. K. Leow. Associating Text and Graphics for Scientific Chart Understanding. In *Proc. Int. Conf. on Document Analysis and Recognition (ICDAR 2005), 2005.*
 63. K. H. Low, W. K. Leow, M. H. Ang, Jr. An Ensemble of Cooperative Extended Kohonen Maps for Complex Robot Motion Tasks, *Neural Computation*, 17(6):1411-1445, 2005.
 64. I. Atmosukarto, W. K. Leow, Z. Huang. Feature Combination and Relevance Feedback for 3D Model Retrieval. In *Proc. Int. Conf. on Multimedia Modeling*, pages 334-339, 2005.
 65. W. Huang, C. L. Tan, and W. K. Leow. Elliptic arc vectorization for 3D pie chart recognition. In *Proc. Int. Conf. on Image Processing, 2004.*
 66. S. E. Lim, Y. Xing, Y. Chen, W. K. Leow, T. S. Howe, and M. A. Png. Detection of Femur and Radius Fractures in X-Ray Images. In *Proc. 2nd Int. Conf. on Advances in Medical Signal and Information Processing*, pages 249-256, 2004.
 67. W. K. Leow, S. C. Khoo, T. H. Loh, and V. Suhendra . Heuristic Search with Reachability Tests for Automated Generation of Test Programs. In *Proc. IEEE Int. Conf. on Automated Software Engineering*, 2004, p. 282-285.
 68. D. W.-H. Yap, Y. Chen, W. K. Leow, T. S. Howe, and M. A. Png. Detecting Femur Fractures by Texture Analysis of Trabeculae. In *Proc. Int. Conf. on Pattern Recognition*, volume 3, pages 730-733, 2004.
 69. M. C. S. Paterno, F. S. Lim, W. K. Leow. Fuzzy Semantic Labeling for Image Retrieval. In *Proc. Int. Conf. on Multimedia and Expo*, volume 2, pages 767-770, 2004.
 70. K. H. Low, W. K. Leow, and M. H. Ang, Jr. Task Allocation via Self-Organizing Swarm Coalitions in Distributed Mobile Sensor Network. In *Proc. 19th National Conference on Artificial Intelligence (AAAI)*, pages 28-33, 2004.
 71. K. H. Low, W. K. Leow, and M. H. Ang, Jr. Reactive, Distributed Layered Architecture for Resource-Bounded Multi-Robot Cooperation. In *Proc. Int. Conf. on Robotics and Automation*, pages 3747-3752, 2004.
 72. W. K. Leow, S. C. Khoo, and Y. Sun. Automated generation of test programs from closed specifications of classes and test cases. In *Proc. Int. Conf. on Software Engineering*, pages 96-105, 2004.

73. K. H. Low, W. K. Leow, and M. H. Ang, Jr. Continuous-spaced action selection for single- and multi-robot tasks using cooperative extended Kohonen maps. In *Proc. IEEE Int. Conf. on Networking, Sensing, and Control*, pages 198-203, 2004.
74. W. K. Leow and R. Li. The analysis and applications of adaptive-binning color histograms. *Computer Vision and Image Understanding, Special Issue: Colour for Image Indexing and Retrieval*, 94(1-3):67-91, 2004.
75. W. K. Leow. Perceptual consistency for image retrieval. In T. K. Shih & P. P. Wang, editor, *Intelligent Virtual World*, pages 53-73. World Scientific Publisher, 2004.
76. W. Huang, C. L. Tan, and W. K. Leow. Model-Based Chart Image Recognition. In J. Lladós, Y.-B. Kwon (Ed.), *Proc. Int. Workshop on Graphics Recognition: Recent Advances and Perspectives, GREC 2003, (LNCS 3088)*, pages 87-99, 2004.
77. T. P. Tian, Y. Chen, W. K. Leow, W. Hsu, T. S. Howe, M. A. Png. Computing neck-shaft angle of femur for x-ray fracture detection. In *Proc. Int. Conf. on Computer Analysis of Images and Patterns, LNCS 2756*, pages 82-89, 2003.
78. I. Widjaja, W. K. Leow, and F.-C. Wu. Identifying painters from color profiles of skin patches in painting images. In *Proc. Int. Conf. on Image Processing*, 2003.
79. K. H. Low, W. K. Leow, and M. H. Ang, Jr. Action selection for single- and multi-robot tasks using cooperative extended Kohonen maps. In *Proc. Int. Joint Conf on Artificial Intelligence*, pages 1505-1506, 2003.
80. M. Yu, I. Atmosukarto, W. K. Leow, Z. Huang, R. Xu. 3D model retrieval with morphing-based geometric and topological feature maps. In *Proc. IEEE Conf. on Computer Vision and Pattern Recognition*, pages II-656-II-661, 2003.
81. P. Mulhem, J. H. Lim, W. K. Leow, M. Kankanhalli. Advances in digital home photo albums. In S. Deb, editor, *Multimedia Systems and Content-Based Image Retrieval*, pages 201-226. Idea Group Publishing, 2003.
82. K. H. Low, W. K. Leow, and M. H. Ang, Jr. Enhancing the reactive capabilities of integrated planning and control with cooperative extended Kohonen maps. In *Proc. IEEE Int. Conf. on Robotics and Automation*, pages 3428-3433, 2003.
83. K. H. Low, W. K. Leow, and M. H. Ang, Jr. Action selection in continuous state and action spaces by cooperation and competition of extended Kohonen maps. In *Proc. Int. Joint Conf. on Autonomous Agent & Multi Agent Systems*, pages 1056-1057, 2003.
84. R. Li and W. K. Leow. From region features to semantic labels: A probabilistic approach. In *Proc Int. Conf. on Multimedia Modeling*, pages 402-420, 2003.
85. W. K. Leow. *The Algebra and Analysis of Adaptive-Binning Color Histograms*. Tech. Report No. TRB8/02, Dept. of Computer Science, School of Computing, National University of Singapore, August 2002.
86. F. S. Lim and W. K. Leow. Adaptive histograms and dissimilarity measure for texture retrieval and classification. In *Proc. Int. Conf. on Image Processing*, pages II-825 - II-828, 2002.
87. H. Long and W. K. Leow. A hybrid model for invariant and perceptual texture mapping. In *Proc. Int. Conf. on Pattern Recognition*, volume 1, pages 135-138, 2002.
88. K. H. Low, W. K. Leow, and M. H. Ang, Jr. A hybrid mobile robot architecture with integrated planning and control. In *Proc. Int. Joint Conf. on Autonomous Agent & Multi Agent Systems*, pages 219-226, 2002.

89. K. H. Low, W. K. Leow, and M. H. Ang, Jr. Integrated planning and control of mobile robot with self-organizing neural network. In *Proc. IEEE Int. Conf. on Robotics and Automation*, pages 3870-3875, 2002.
90. L. Zhou, I. Atmosukarto, W. K. Leow, and Z. Huang. Reconstructing surface discontinuities by intersecting tangent planes of advancing mesh frontiers. In *Proc. Computer Graphics International*, pages 183-199, 2002.
91. R. Setiono, W. K. Leow, and J. M. Zurada. Extraction of rules from artificial neural networks for nonlinear regression. *IEEE Trans. Neural Networks*, 13(3):564-577, 2002.
92. W. K. Leow, *Color Spaces and Color-Difference Equations*, 2002.
93. W. K. Leow and R. Li. Adaptive binning and dissimilarity measure for image retrieval and classification. In *Proc. IEEE Conf. on Computer Vision and Pattern Recognition*, pages II-234-II-239, 2001.
94. H. Long and W. K. Leow. Perceptual consistency improves image retrieval performance. In *Proc. ACM SIGIR*, pages 434-435, 2001.
95. H. Long, C. W. Tan, and W. K. Leow. Invariant and perceptually consistent texture mapping for content-based image retrieval. In *Proc. Int. Conf. on Image Processing*, pages 117-120, 2001.
96. H. Long and W. K. Leow. Perceptual texture space improves perceptual consistency of computational features. In *Proc. Int. Joint Conf on Artificial Intelligence*, pages 1391-1396, 2001.
97. P. Mulhem, W. K. Leow, and Y. K. Lee. Fuzzy conceptual graph for matching images of natural scenes. In *Proc. Int. Joint Conf on Artificial Intelligence*, pages 1397-1402, 2001.
98. I. Atmosukarto, L. Zhou, W. K. Leow, Z. Huang. Polygonizing non-uniformly distributed 3D points by advancing mesh frontiers. In *Proc. Computer Graphics International*, pages 175-182, 2001.
99. W. K. Leow and S. Y. Lai. Invariant matching of texture for content-based image retrieval. In M Pietikäinen, editor, *Texture Analysis in Machine Vision*, pages 151-163. World Scientific, 2000.
100. H. Long, W. K. Leow, and F. K. Chua. Perceptual texture space for content-based image retrieval. In *Proc. Int. Conf. on Multimedia Modeling*, pages 167-180, 2000.
101. S. S. Wong and W. K. Leow. Colour segmentation and figure-ground segregation of natural images. In *Proc. Int. Conf. on Image Processing*, pages II-120-II-123, 2000.
102. W. K. Leow, Z. Huang, L. Zhou, I. Atmosukarto and Y. Zhang. Acquiring 3D models from images for multimedia systems. In *Proc. Int. Conf. on Multimedia Modeling*, pages 439-449, 2000.
103. I Atmosukarto, W. K. Leow, Z. Huang, Y. Zhang, and K. K. Sung. Mesh construction from non-uniformly distributed and noisy 3D points recovered from image sequence. In *Proc. Pacific Graphics Conf.*, pages 423-424, 2000.
104. W. K. Leow, Z. Huang, Y. Zhang, and R. Setiono. Rapid 3D model acquisition from images of small objects. In *Proc. Geometric Modeling & Processing*, pages 33-41, 2000.
105. R. Setiono, W. K. Leow and J. Y. L. Thong. Opening the neural network blackbox: An algorithm for extracting rules from function approximating artificial neural networks. In *Proc. Int. Conf. on Information Systems*, pages 176-186, 2000.

106. R. Setiono and W. K. Leow. Pruned neural networks for regression. In *Proc. Pacific-Rim Conf. on Artificial Intelligence*, pages 500-509, 2000.
107. R. Setiono and W. K. Leow. FERNN: An algorithm for fast extraction of rules from neural networks. *Applied Intelligence*, 12:15-25, 2000.
108. W. K. Leow and S. C. Khoo. *Towards Fully Automated Test Program Generation from Closed Specification of Classes*. Tech. Report TRA3/00, Dept. of Computer Science, School of Computing, National University of Singapore, March 2000.
109. W. K. Leow and S. Y. Lai. Invariant matching of texture for content-based image retrieval. In *Proc. Workshop on Texture Analysis in Machine Vision*, pages 119-125. Oulu, Finland, 1999.
110. W. K. Leow. A spatiotemporal memory that separates "what" and "when". In *Proc. Int. Joint. Conf. on Neural Networks*, pages 4090-4094, 1999.
111. R. Setiono and W. K. Leow. Generating rules from trained network using fast pruning. In *Proc. Int. Joint. Conf. on Neural Networks*, pages 4095-4098, 1999.
112. W. K. Leow and R. Setiono. Explanation of the "virtual input" phenomenon. *Neural Networks*, 12(1):191-192, 1999.
113. R. Setiono and W. K. Leow. On mapping decision trees and neural networks. *Knowledge-Based Systems*, 12, pages 95-99, 1999.
114. W. K. Leow and Z. Huang. *Accurate and True Reconstruction of 3D Models with Closed-Form Solutions*. Tech. Report No. TR12/98, School of Computing, National University of Singapore, 1998.
115. N. Zhang and W. K. Leow. Perceptually consistent segmentation of texture using multiple channel filter. In *Proc. Asian Conf. on Computer Vision*, pages 17-24, 1998.
116. W. K. Leow. Computational studies of exploration by smell. *Adaptive Behavior*, 6(3/4):409-432, 1998.
117. S. Y. Lai and W. K. Leow. Invariant texture matching for content-based image retrieval. In *Proc. Int. Conf. on Multimedia Modeling*, pages 53-68, 1997.
118. W. K. Leow and H. C. Yee. A minimal neural network for target searching and danger avoidance by smell, In *Proc. Int. Conf. on Neural Networks*, volume I, pages 580-585, 1997.
119. W. K. Leow and S. C. Lua. An improved neural network for segmenting objects' boundaries in real images. In *Proc. Int. Conf. on Neural Networks*, volume III, pages 1663-1668, 1997.
120. W. K. Leow and R. Miikkulainen. Visual schemas in neural networks for object recognition and scene analysis. *Connection Science*, 9(2):161-200, 1997.
121. R. Miikkulainen and W. K. Leow. Visual schemas: Representation in neural networks for object recognition. In Arbib, M. A., editor, *Handbook of Brain Theory and Neural Networks*. Cambridge, Massachusetts: MIT Press, 1995.
122. W. K. Leow and R. Miikkulainen. VISOR: Schema-based scene analysis with structured neural networks. *Neural Processing Letters*, 1(2), 1994, 18-23.
123. W. K. Leow and R. Miikkulainen. Priming, perceptual reversal, and circular reaction in a neural network model of schema-based vision. In *Proc. 16th Annual Conference of Cognitive Science Society*, 1994, 560-565.

124. W. K. Leow and R. Miikkulainen. Visor: Schema-based scene analysis with neural networks. In *Proc. International Symposium on Artificial Neural Networks*, 1994.
125. W. K. Leow and R. Miikkulainen. Representing and learning visual schemas in neural networks for scene analysis. In *Proc. 4th Iberoamerican Congress on AI*, 516-525.
126. W. K. Leow. *VISOR: Learning Visual Schemas in Neural Networks for Object Recognition and Scene Analysis*. Technical Report AI94-219, Dept. of Computer Sciences, The University of Texas at Austin, June 1994. (Ph.D. Dissertation)
127. W. K. Leow and R. Miikkulainen. Representing and learning visual schemas in neural networks for scene analysis. In Arbib, M. A., editor, *Proceedings of Workshop on Neural Architectures and Distributed AI: From Schema Assemblages to Neural Networks*. Center for Neural Engineering, University of Southern California, 1993.
128. W. K. Leow and R. Miikkulainen. Representing visual schemas in neural networks for scene analysis. In *Proceedings of International Conference on Neural Networks*, 1993, vol. III, 1612-1617.
129. W. K. Leow and R. Miikkulainen. A neural network for attentional spotlight. In *Proceedings of International Joint Conference on Neural Networks (Singapore)*, 1991, 436-441.
130. W. K. Leow and R. Miikkulainen. A neural network for attentional spotlight. Technical Report AI91-165, Dept. of Computer Sciences, The University of Texas at Austin, October 1991.
131. J. D. Keeler, D. E. Rumelhart, and W. K. Leow. Integrated segmentation and recognition of hand-printed numerals. In *Advances in Neural Information Processing Systems 3*, San Mateo, California: Morgan Kaufmann, 1991, 557-563.
132. W. K. Leow and R. F. Simmons. *A constraint satisfaction neural network for case analysis*. Technical Report AI90-129, Dept. of Computer Sciences, The University of Texas at Austin, 1990.
133. G. L. Martin, W. K. Leow, and J. Pittman. *Function complexity effects on backpropagation learning*. Technical Report ACT-HI-062-90, Microelectronics and Computer Technology Corporation, Austin, Texas, 1990.
134. H.-C. Teh and W. K. Leow. Digital design of an educational CPU. *International Journal of Electrical Engineering Education*, 27(2), 1990, 175-177.
135. W. K. Leow. *On pattern description and analysis for syntactic pattern recognition*. Master's thesis, Dept. of Information Systems and Computer Science, National University of Singapore, 1988.
136. W. K. Leow, L.-S. Hsu, and K. T. Lua. Recognizing handprinted chinese characters with a heuristic parser. In *Proc. Int. Conf. Chinese Computing*, 1988.
137. W. K. Leow. Research in chinese character recognition. In *Proceedings of Chinese Computing Seminar*, 1987, 81-100.
138. W. K. Leow. Syntactic approach to chinese character recognition. In *Proc. Int. Conf. Chinese Computing*, 1986, 124-130.